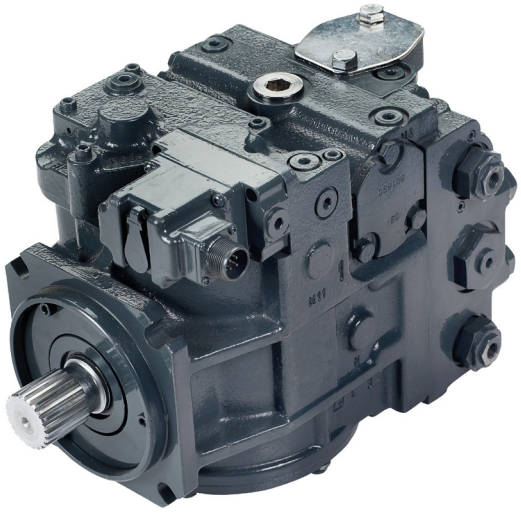
Danfoss Power Solutions 90R100

Product Page
http://www.atlantic-hydraulics.com/product-categories/sauer-danfoss-power-solutions/90-series-pumps/90r100/



ATLANTIC HYDRAULICS

Danfoss Power Solutions Factory Trained

Danfoss Power Solutions Authorized Service Center

Danfoss Power Solutions Parts Distributor

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Service Parts Identification

The following information and procedure is used to identify the module group, item number, manufactured date, part number, and part name of the parts included in the Series 90 Pump.

The parts listed include all parts which may be used when performing either "Minor Repairs", "Major Repairs", or "Conversions" on the Series 90 Pump.

- Nameplate -

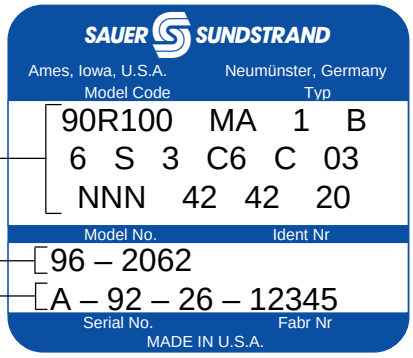
Each pump will have a nameplate affixed to the housing. The name plate will include the following information.

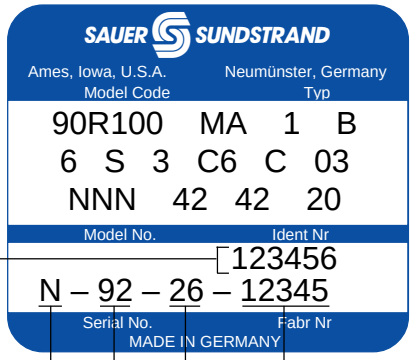
Model Code
The Sauer-Sundstrand model code completely defines the specific unit and must be used when ordering the complete unit for the first time or for ordering parts to service the product.

Model Number
The Sauer-Sundstrand model number is used by the factory in manufacturing. On repeat orders, a complete unit can also be ordered by the model mumber.

Serial Number
The Sauer-Sundstrand serial number is used to identify the manufacturing location, manufacturing date and the unit sequence in the build. The serial number is also used to identify the unit's warranty time period.

Identification Number
Pumps manufactured in Germany will have an identification number instead of a model number.





The letter code indicates the location of original manufacture (assembly). "A" indicates the unit was originally assembled in Ames, Iowa, USA. "N" indicates the unit was originally assembled in Neumünster, Germany.

The first number (2 digits) indicates the year of manufacture. ("92" would indicate the unit was manufactured in 1992)

The second number (2 digits) indicates the calender week of manufacture.

The third number (5 digits) is a sequential number used to identify a specific unit.

Date Code

The date code is defined as the year and week of manufacture. The same reference number may list more than one part number. This indicates that there is more than one configuration for that reference number. You will see that there are different date codes for the different part numbers. Find the date code of your unit via the nameplate to determine which service part number you need to order.

EXAMPLE: The service part desired is Item G302.

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model
2	G302	89-46 →	8200212	End cap gasket **(SB-9203)**	1
	"	87-02 → 89-45	8200043	End cap gasket **(SB-8923)**	1

All units using this module group with a date code of 87-02 and up to and including 89-45 must use part number "8200043". All units with a date code of 89-46 and up must use part number "8200212".

Service Bulletins

A Service Bulletin Number **(SB- _ _ _ _)** may follow the "Description" of the part you desire. You must read that Service Bulletin prior to ordering that part. A copy of each of these Service Bulletins, as of the print date of this bulletin, are included at the end of this manual. Service Bulletins contain more detailed information such as interchangeability, what additional parts are involved, etc. It is suggested that you add additional Service Bulletins to this manual as you receive them.

Procedure to Identify a Given Part/Part Number

General

The modular design of Series 90 units results in a simplified Service Parts List and Part Identification Procedure.

The same item numbers are used for same part description on all units within a product type. (Example: The shaft seal - Item Number L40 has the same item number on all variable displacement pumps.)

All Item Numbers begin with a letter. The letter identifies a particular module. (Example: any items beginning with "K" relate to the charge relief valve; items beginning with "L" relate to the drive shaft components, etc.)

Example of a Part Identification

The nameplate on a Series 90 pump has an Order Code of 90L100 EP 1 V 6 P 3 S4 E 05 NNN 38 38 20. Use the following procedures to determine the part number of the filtration kit used on this pump.

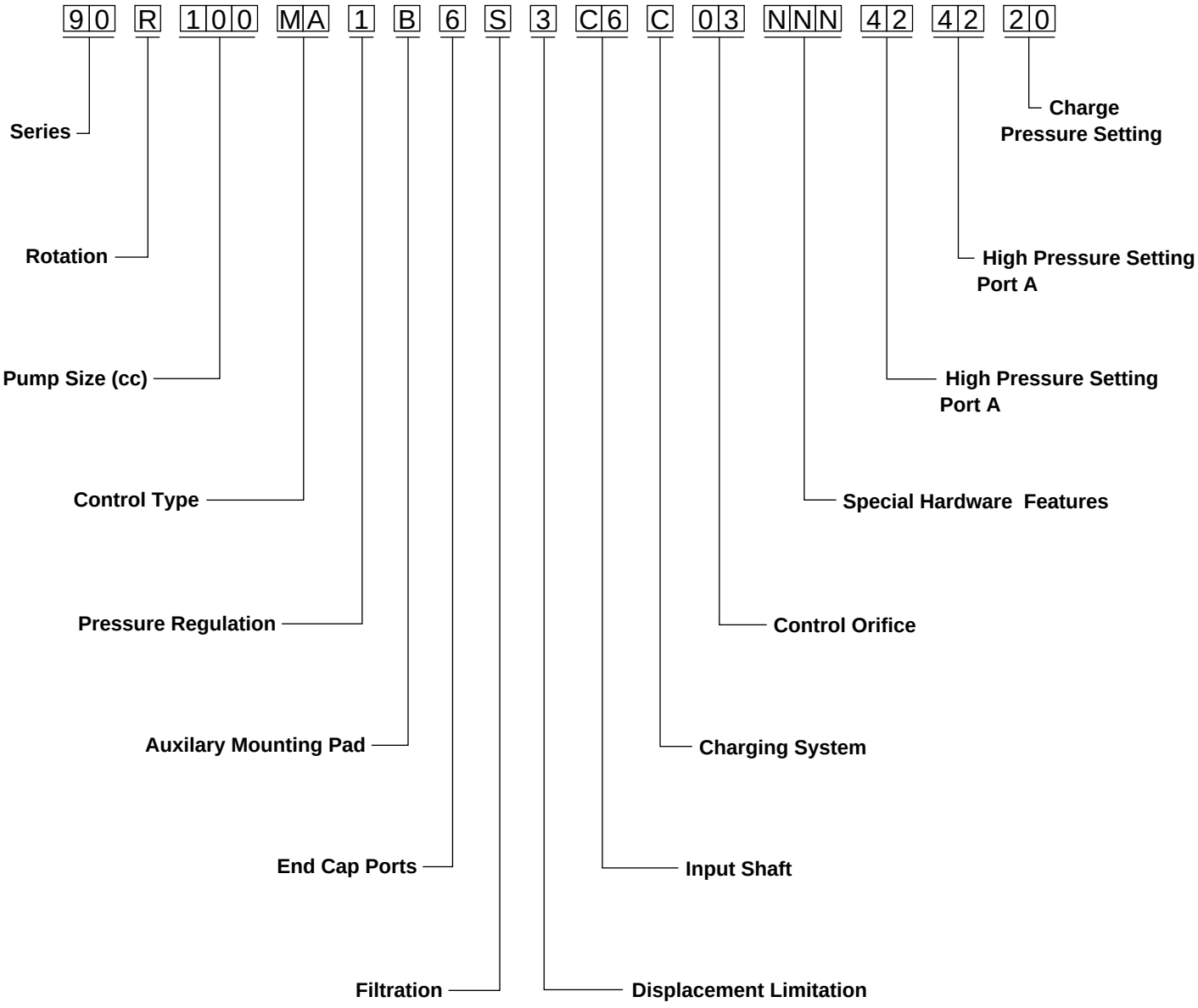
1) Referring to the filtration module in the Model Code (see page 5), the filtration option for this unit is identified by the code "P" (90L100 EP 1 V 6 **P** 3 S4 E 05 NNN 38 38 20)
2) Referring to the Service Parts List, find the filtration group. Next find the order code that relates to this unit, which is "P". The filtration kit is found to be item N00M and part number 8002N00M-A. Also note that the saleable parts included in this kit are indented, which indicates the filter is not included in the kit.

SAUER SUNDSTRAND

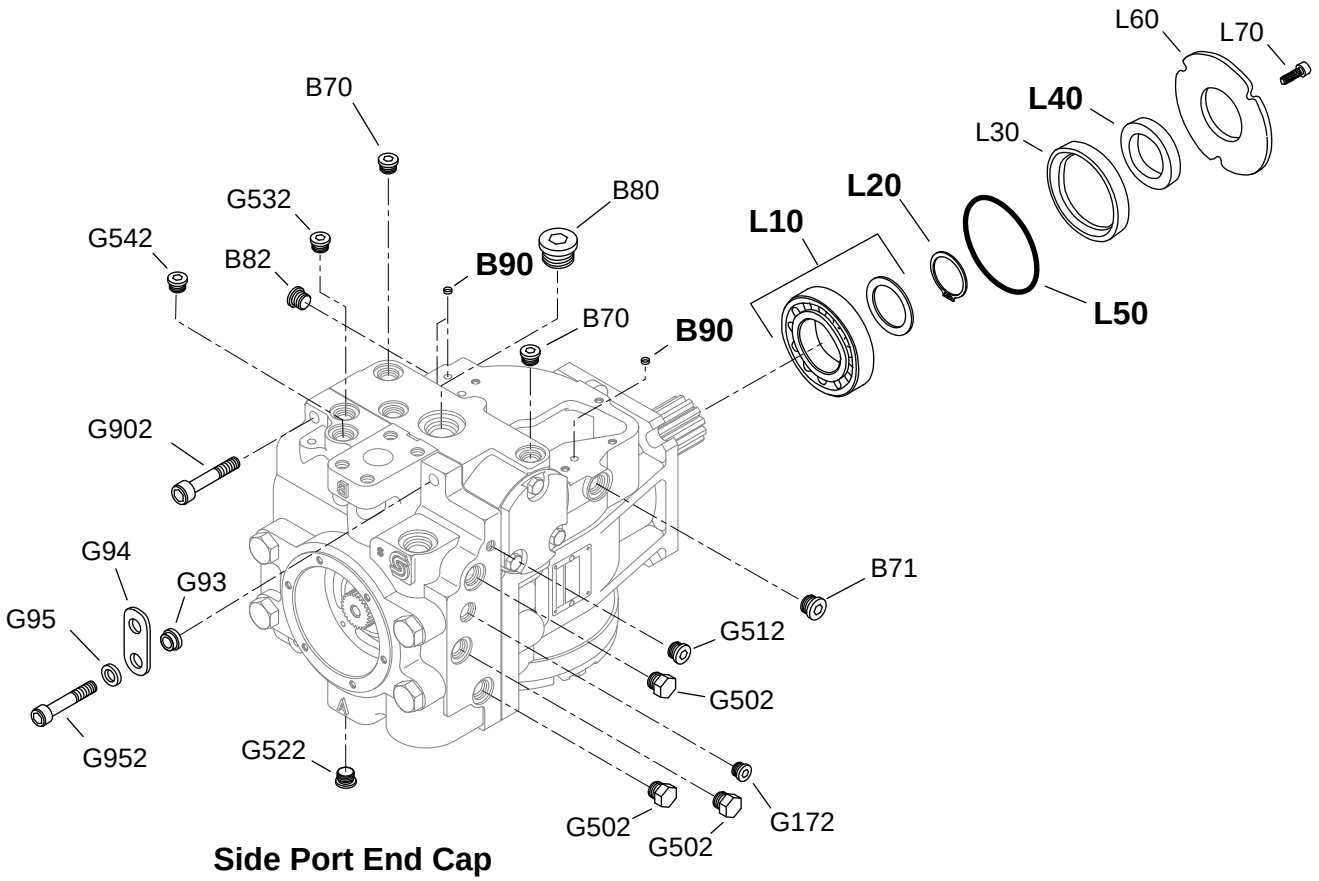
Genuine Parts
Original
Ersatzteile

Series 90
100 cc Pump

BLN-2-41672
May, 1996

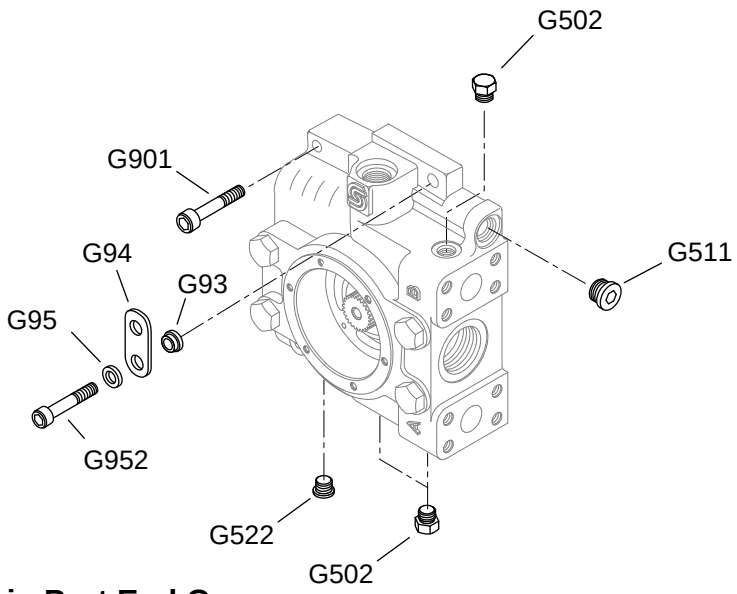


Common Parts



Side Port End Cap

Enlarged bold type item numbers are Recommended parts to be stocked for servicing.



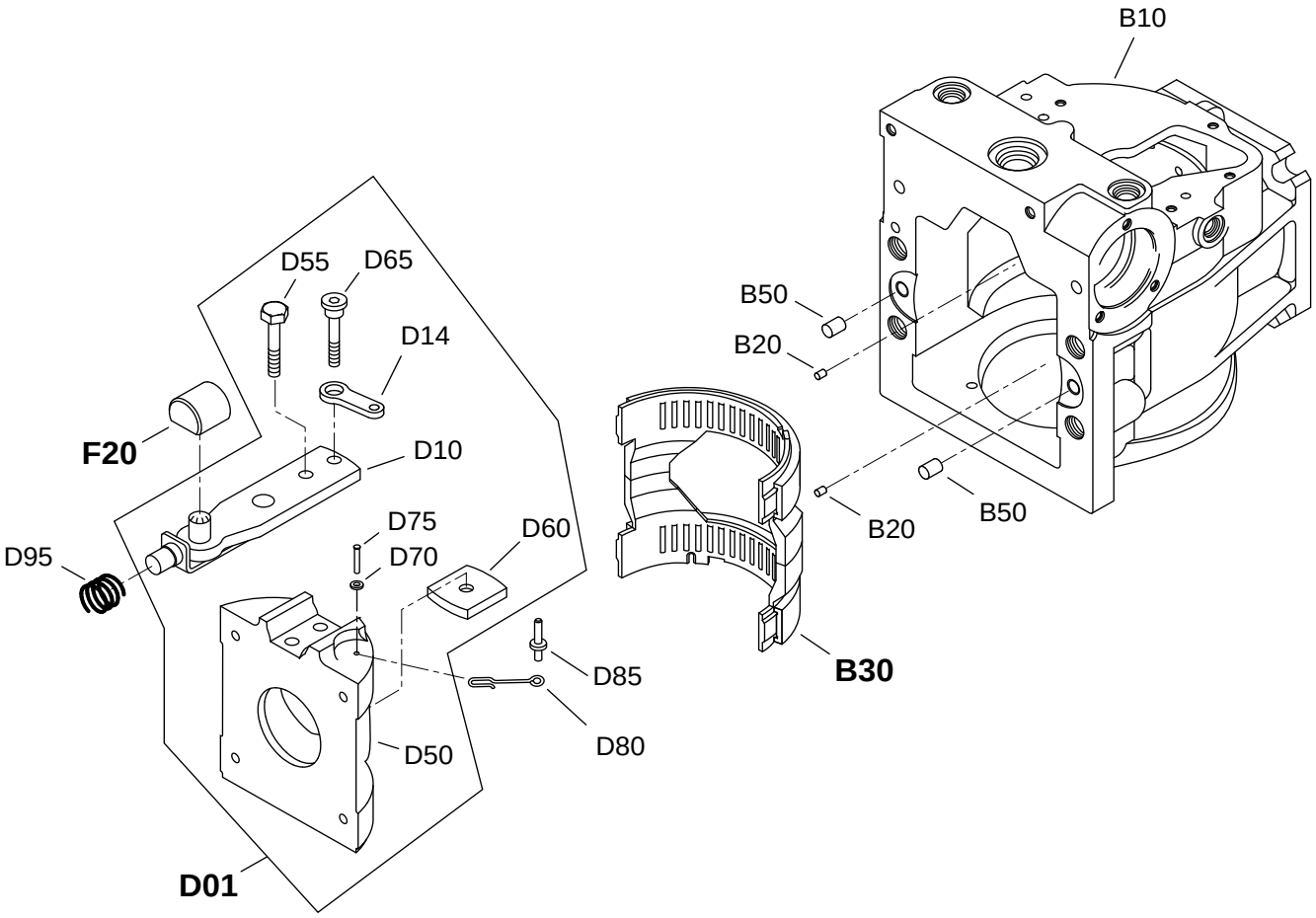
Twin Port End Cap

100 cc Variable Displacement Pump

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
	B70	87-02 →	9005110-5600	Plug	2
	B71	87-02 →	9005110-4400	Plug	1
	B80	87-02 →	9005110-9000	Plug	1
	B82	92-12 →	9005110-5600	Plug **(SB-9203)**	1
	B90	**87-02 →**	**9803390**	**Control filter screen**	**3**
	G93	92-12 →	8800564	Spacer **(SB-9203)**	1
	"	*87-02 → 92-11*	*8800404*	*Spacer*	*1*
	G94	92-12 →	8800565	Lifting bracket **(SB-9203)**	1
	"	*87-02 → 92-11*	*8800522*	*Lifting bracket*	*1*
	G95	92-12 →	9009610-3459	Washer **(SB-9203)**	1
	"	*87-02 → 92-11*	*9009610-2850*	*Washer*	*1*
	G172	92-12 →	9005110-4400	Plug	1
	G502	87-02 →	9005100-5600	Plug	3
	G511	87-02 →	9005110-5600	Plug	1
	G512	87-02 →	9005110-4400	Plug	1
	G522	87-02 →	9005110-5600	Plug	1
	G532	87-02 →	9005110-5600	Plug	1
	G542	87-02 →	9005110-5600	Plug	1
	G901	92-12 →	9007314-0810	Screw **(SB-9203)**	1
	"	*89-46 → 92-11*	*9007314-0608*	*Screw*	*1*
	G902	92-12 →	9007314-0810	Screw **(SB-9203)**	1
	"	*89-46 → 92-11*	*9007314-0608*	*Screw*	*1*
	"	*87-02 → 89-45*	*9007314-0607*	*Screw*	*1*
	G952	92-12 →	9007314-0810	Screw **(SB-9203)**	1
	"	*87-02 → 92-11*	*9007314-0608*	*Screw*	*1*
	L10	**87-02 →**	**683722**	**Roller bearing**	**1**
	L20	**87-02 →**	**9006300-0175**	**Retaining ring**	**1**
	L30	87-02 →	8200112	Seal carrier	1
	L40	**87-02 →**	**9008000-0114**	**Lip seal**	**1**
	L50	**87-02 →**	**9004104-1540**	**O-ring**	**1**
	L60	87-02 →	8200135	Retainer plate	1
	L70	87-02 →	9007314-0605	Screw, M6 x 20	4

Bold Items indicate recommended parts to be stocked for servicing

Common Parts



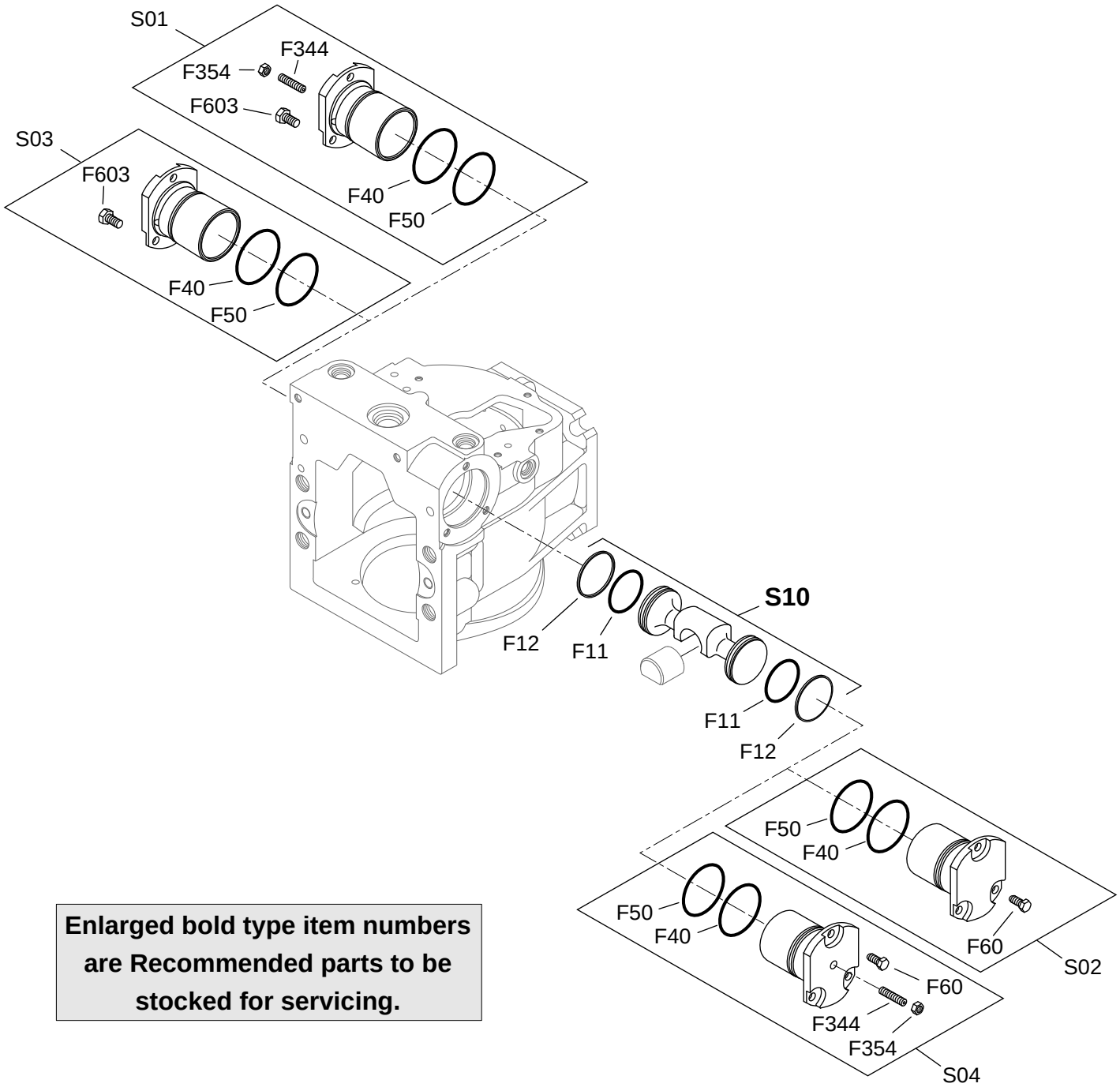
Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

100 cc Variable Displacement Pump

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
	B10	92-12 →	8200305	Variable housing **(SB-9435)**	1
	B20	87-02 →	9004800-1904	Pin	2
	B30	**87-02 →**	**8200053**	**Bearing**	**1**
	B50	87-02 →	9004800-3708	Pin	2
	D01	**88-16 →**	**8200192**	**Swashplate assy. (SB-8809)**	**1**
	D10	88-16 →	8200268	Servo arm assembly **(SB-9315)**	1
	D14	87-02 →	8200344	Feedback link **(SB-9609)**	1
	D50	88-16 →	8200232	Swashplate **(SB-8809)**	1
	D55	87-02 →	9007276-0111	Screw	1
	D60	87-02 →	8800669	Swashplate guide	1
	D65	87-02 →	9007375-0032	Screw **(SB-9211)**	1
	D70	87-02 →	9009625-0146	Washer	1
	D75	87-02 →	9004875-0098	Spiral head pin	1
	D80	87-02 →	8200273	Cage locator link **(SB-9417)**	1
	D85	87-02 →	8100235	Pin	1
	D95	87-02 →	8200058	Spring	1
	F20	**87-02 →**	**8200225**	**Slider block**	**1**

Bold Items indicate recommended parts to be stocked for servicing

Displacement Limitation



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

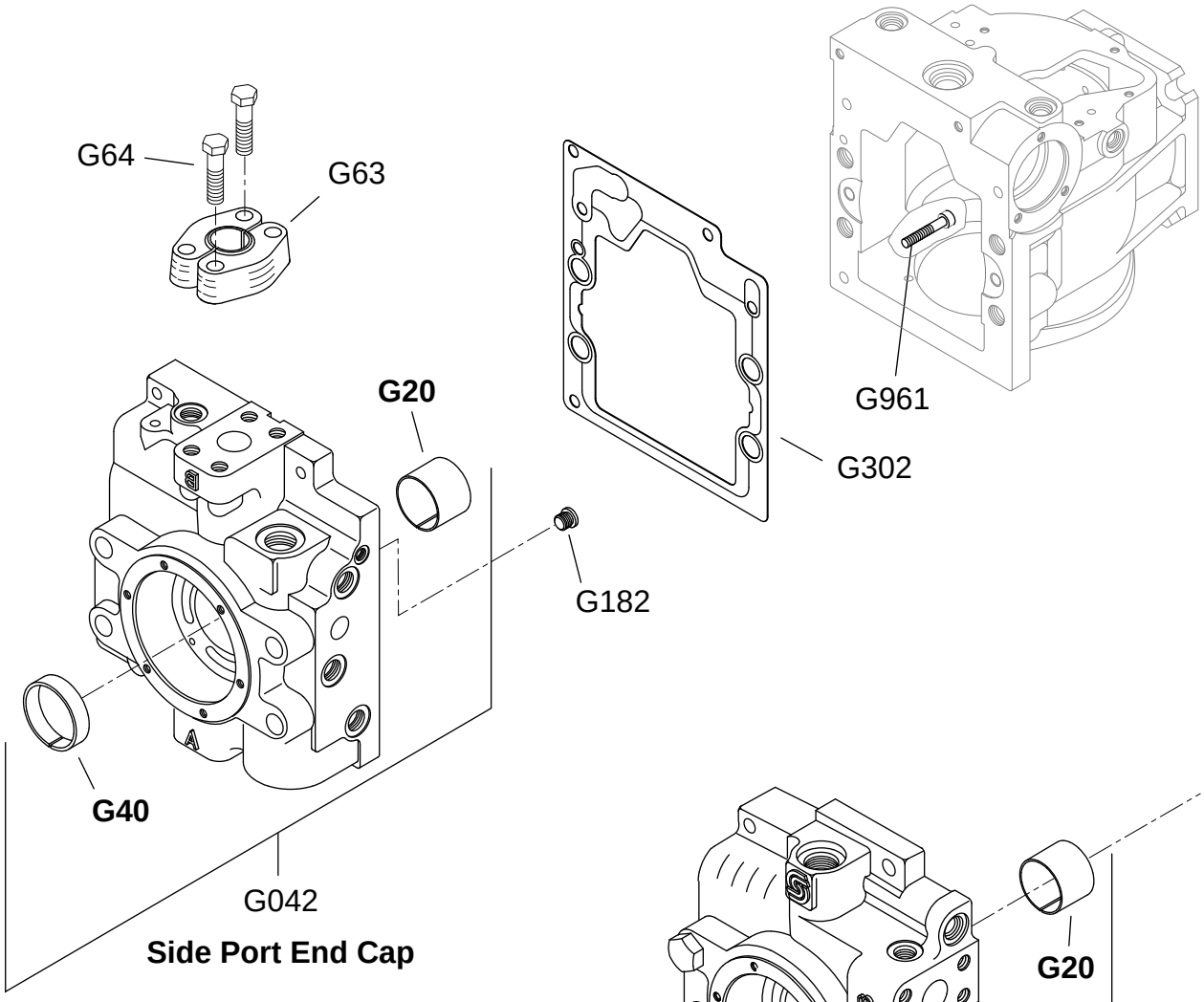
100 cc Variable Displacement Pump

Displacement Limitation Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
3	S02	87-02 →	8202F003-A	Servo sleeve kit - No limitation	1
	F40	87-02 →	9004104-0350	O-ring	1
	F50	87-02 →	9004104-0340	O-ring	1
	F60	87-02 →	9007210-0804	Screw	3
	S03	87-02 →	8202F003-A	Servo sleeve kit - No limitation	1
	F40	87-02 →	9004104-0350	O-ring	1
	F50	87-02 →	9004104-0340	O-ring	1
	F60	87-02 →	9007210-0804	Screw	3
4	S01	87-02 →	8202F004-A	Servo sleeve kit - Adjustable	1
	F40	87-02 →	9004104-0350	O-ring	1
	F50	87-02 →	9004104-0340	O-ring	1
	F60	87-02 →	9007210-0804	Screw	3
	F344	87-02 →	9007712-0814	Set screw	1
	F354	87-02 →	9003509-0008	Seal nut	1
	S04	87-02 →	8202F004-A	Servo sleeve kit - Adjustable	1
	F40	87-02 →	9004104-0350	O-ring	1
	F50	87-02 →	9004104-0340	O-ring	1
	F60	87-02 →	9007210-0804	Screw	3
	F344	87-02 →	9007712-0814	Set screw	1
	F354	87-02 →	9003509-0008	Seal nut	1
F	S02	96-01→	8510124	Servo sleeve kit, no limitation	1
	F40	96-01 →	9004104-0350	O-ring	1
	F50	96-01 →	9004104-0340	O-ring	1
	F60	96-01 →	9007210-0804	Screw	3
	S03	96-01 →	8510124	Servo sleeve kit - No limitation	1
	F40	96-01 →	9004104-0350	O-ring	1
	F50	96-01 →	9004104-0340	O-ring	1
	F60	96-01 →	9007210-0804	Screw	3
	S10	**87-02 →**	**82020S10**	**Servo piston kit (SB-8809)**	**1**
	F11	87-02 →	9004100-1310	O-ring	2
	F12	87-02 →	8700067	Piston ring	2

Bold Items indicate recommended parts to be stocked for servicing

End Cap



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

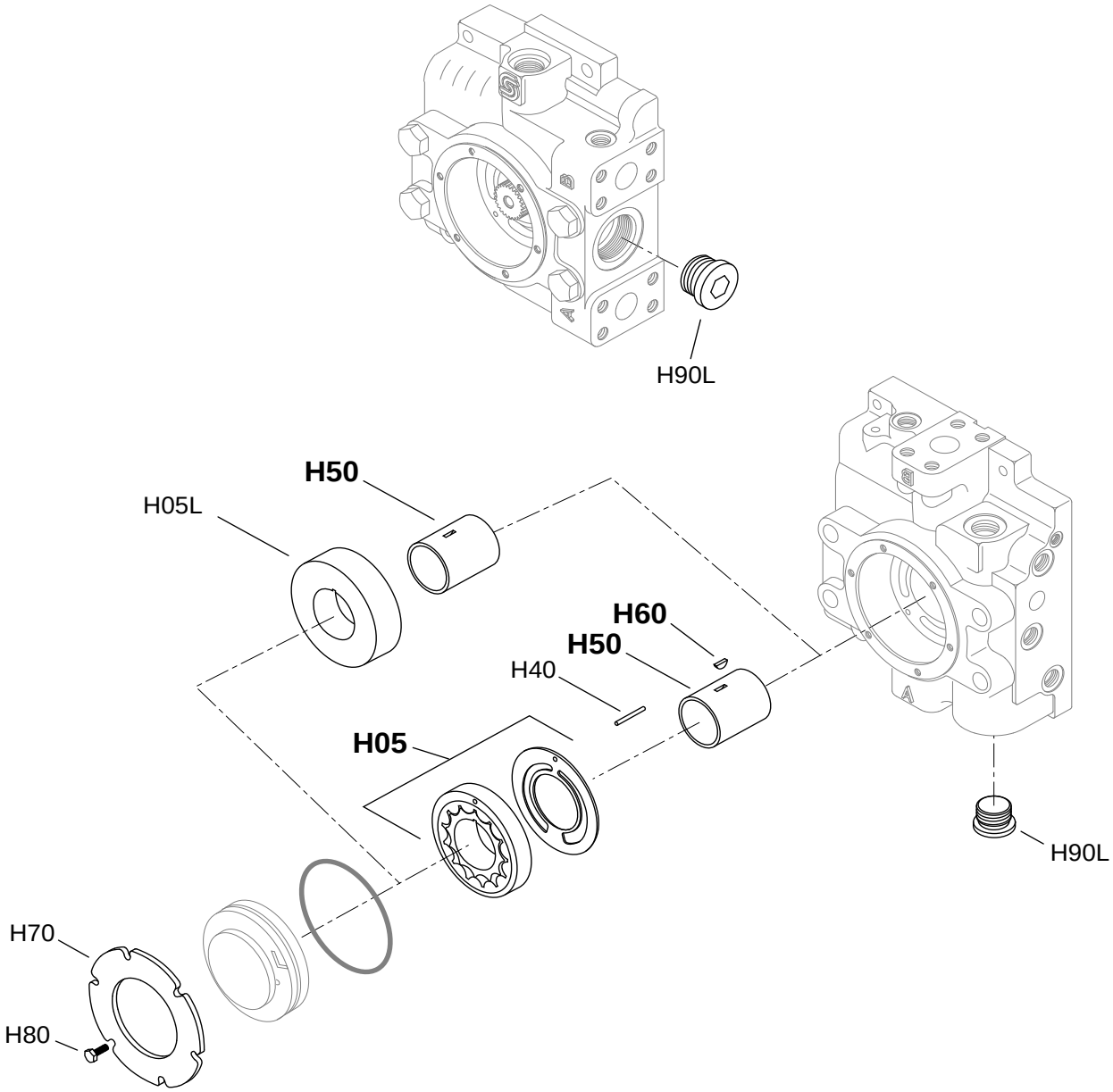
100 cc Variable Displacement Pump

G: End Cap Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
1	G041	92-12 →	8200235	End cap, twin ports **(SB-9203)**	1
	G20	**87-02 →**	**8700030**	**Journal bearing**	**1**
	G40	**87-02 →**	**8700008**	**Bushing**	**1**
	G63	87-02 →	8700074	Split clamp	4
	G64	87-02 →	9007200-4426	Screw	4
	G302	87-02 →	8200212	End cap gasket **(SB-9203)**	1
	G961	*92-12 → 95-06*	*9007314-0808*	*Screw* **(SB-9435)**	1
	G961	*87-02 → 92-11*	*9007314-0607*	*Screw*	*1*
2	G042	89-46 → 89-46	8200236	End cap, side ports **(SB-9203)**	1
	G20	**87-02 →**	**8700030**	**Journal bearing**	**1**
	G40	**87-02 →**	**8700008**	**Bushing**	**1**
	G63	87-02 →	8700074	Split clamp	4
	G64	87-02 →	9007200-4426	Screw	4
	G182	92-12 →	9005110-4400	Plug **(SB-9203)**	1
	G302	89-46 →	8200212	End cap gasket **(SB-9203)**	1
	"	*87-02 → 89-45*	*8200043*	*End cap gasket* **(SB-8923)**	*1*
	G961	*92-12 → 95-06*	*9007314-0808*	*Screw* **(SB-9435)**	1
	"	*87-02 → 92-11*	*9007314-0607*	*Screw*	*1*
6	G042	89-46 → 89-46	8200236	End cap, side ports **(SB-9203)**	1
	G20	**87-02 →**	**8700030**	**Journal bearing**	**1**
	G40	**87-02 →**	**8700008**	**Bushing**	**1**
	G182	92-12 →	9005110-4400	Plug **(SB-9203)**	1
	G302	89-46 →	8200212	End cap gasket **(SB-9203)**	1
	"	*87-02 → 89-45*	*8200043*	*End cap gasket* **(SB-8923)**	*1*
	G961	*92-12 → 95-06*	*9007314-0808*	*Screw* **(SB-9435)**	1
	"	*87-02 → 92-11*	*9007314-0607*	*Screw*	*1*
8	G041	92-12 →	8200235	End cap, twin ports **(SB-9203)**	1
	G20	**87-02 →**	**8700030**	**Journal bearing**	**1**
	G40	**87-02 →**	**8700008**	**Bushing**	**1**
	G302	87-02 →	8200212	End cap gasket **(SB-9203)**	1
	G961	*92-12 → 95-06*	*9007314-0808*	*Screw* **(SB-9435)**	1
	"	*87-02 → 92-11*	*9007314-0607*	*Screw*	*1*
H	G042	94-29 →	8200294	End cap, metric side ports	1
	G20	**94-29 →**	**8700030**	**Journal bearing**	**1**
	G40	**94-29 →**	**8700008**	**Bushing**	**1**
	G182	94-29 →	9005110-4400	Plug	1
	G302	94-29 →	8200212	End cap gasket	1
M	G042	94-15→	8200284	End cap, metric side ports, secial	1
	G20	**94-15 →**	**8700030**	**Journal bearing**	**1**
	G40	**94-15 →**	**8700008**	**Bushing**	**1**
	G182	94-15 →	9005110-4400	Plug	1
	G302	94-15 →	8200212	End cap gasket	1

Bold Items indicate recommended parts to be stocked for servicing

Charging System



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

100 cc Variable Displacement Pump

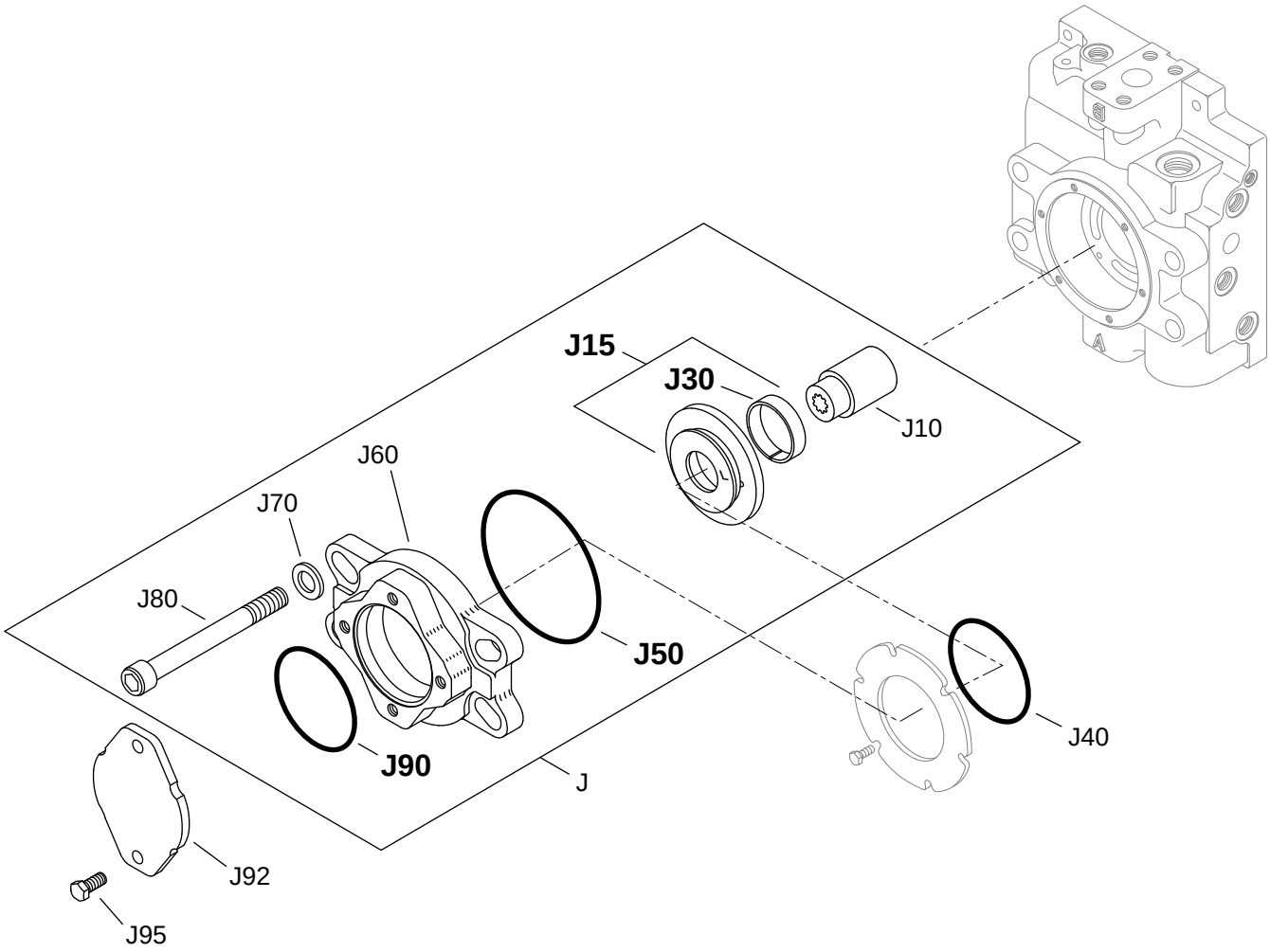
H: Charging System Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
D	**H05**	**93-10 →**	**8200238**	**Charge pump-17cc (SB-9301*)**	**1**
	H40	87-02 →	9004800-1224	Pin	1
	H50	**93-10 →**	**8100476**	**Charge pump shaft (SB-9301*)**	**1**
	"	*88-48 → 93-09*	*337956*	*Charge pump shaft **(SB-8906)***	*1*
	"	*87-02 → 88-47*	*8100142*	*Charge pump shaft*	*1*
	H60	**87-02 →**	**9003310-1208**	**Key**	**1**
	H70	87-02 →	8800424	Retaining plate	1
	H80	87-02 →	9007210-0604	Screw	6
E	**H05**	**93-10 →**	**8200239**	**Charge pump-20cc (SB-9301*)**	**1**
	H40	87-02 →	9004800-1224	Pin	1
	H50	**93-10 →**	**8100476**	**Charge pump shaft (SB-9301*)**	**1**
	"	*88-48 → 93-09*	*337956*	*Charge pump shaft **(SB-8906)***	*1*
	"	*87-02 → 88-47*	*8100142*	*Charge pump shaft*	*1*
	H60	**87-02 →**	**9003310-1208**	**Key**	**1**
	H70	87-02 →	8800424	Retaining plate	1
	H80	87-02 →	9007210-0604	Screw	6
F	**H05**	**93-10 →**	**8200240**	**Charge pump-26cc (SB-9301*)**	**1**
	H40	87-02 →	9004800-1224	Pin	1
	H50	**93-10 →**	**8100476**	**Charge pump shaft (SB-9301*)**	**1**
	"	*88-48 → 93-09*	*337956*	*Charge pump shaft **(SB-8906)***	*1*
	"	*87-02 → 88-47*	*8100142*	*Charge pump shaft*	*1*
	H60	**87-02 →**	**9003310-1208**	**Key**	**1**
	H70	87-02 →	8800424	Retaining plate	1
	H80	87-02 →	9007210-0604	Screw	6
L	**H05L**	**87-02 →**	**8800466-0100**	**Charge pump spacer**	**1**
	H50	**93-10 →**	**8100476**	**Charge pump shaft (SB-9301*)**	**1**
	"	*88-48 → 93-09*	*337956*	*Charge pump shaft **(SB-8906)***	*1*
	"	*87-02 → 88-47*	*8100142*	*Charge pump shaft*	*1*
	H70	87-02 →	8800424	Retaining plate	1
	H80	87-02 →	9007210-0604	Screw	6
	H90L	87-02 →	9005110-9500	Plug	1

*** For additional information regarding replacement parts for units built prior to 93-10, refer to BLN-10107 in the appendix**

Bold Items indicate recommended parts to be stocked for servicing

Auxiliary Mounting Pad



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

100 cc Variable Displacement Pump

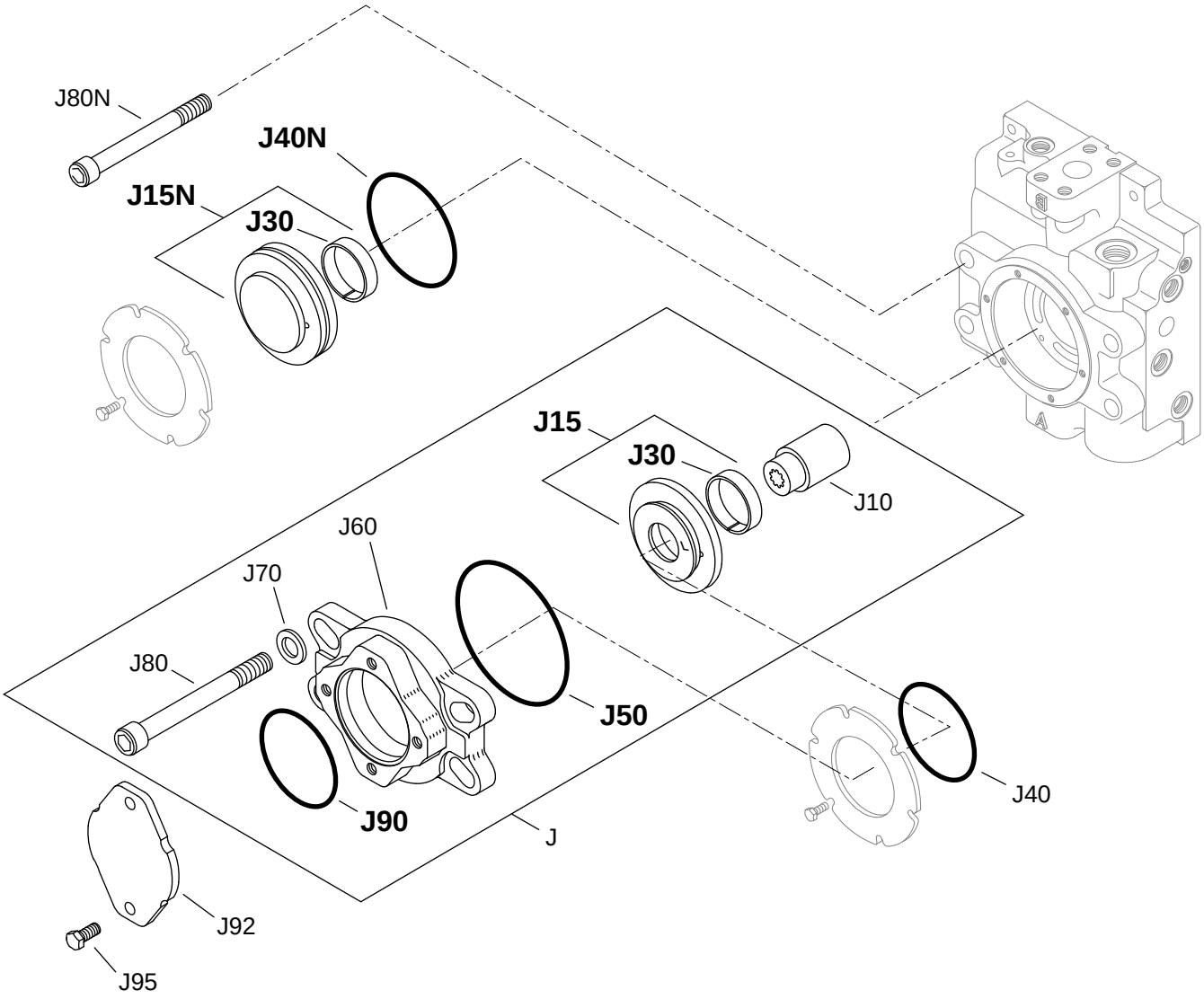
J: Auxiliary Mounting Pad Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
A	J	87-02 →	8202J00A-A	Aux. mtg. A flange kit, 9T	1
	J10	87-02 →	8100147	Coupling	1
	J15	**87-02 →**	**8800832**	**Cover assy., CW (SB-9301*)**	**1**
	“	**87-02 →**	**8800833**	**Cover assy., CCW (SB-9301*)**	**1**
	J30	**87-02 →**	**8700008**	**Bushing**	**1**
	J50	**87-02 →**	**9004104-1580**	**O-ring**	**1**
	J60	87-02 →	8800172	Flange adaptor	1
	J70	87-02 →	9009625-0132	Washer	4
	J80	89-46 →	9007314-1623	Screw **(SB-8923)**	4
	“	*87-02 → 89-45*	*9007314-1624*	*Screw*	*4*
	J90	**87-02 →**	**9004100-0420**	**O-ring**	**1**
	J40	*87-02 → 92-29*	*9004104-0440*	*O-ring*	*1*
	J92	87-02 →	9802336	Cover plate	1
	J95	87-02 →	9007200-3714	Screw	2
B	J	87-02 →	8202J00B-A	Aux. mtg. B flange kit, 13T	1
	J10	87-02 →	8100148	Coupling	1
	J15	**87-02 →**	**8800832**	**Cover assy., CW (SB-9301*)**	**1**
	“	**87-02 →**	**8800833**	**Cover assy., CCW (SB-9301*)**	**1**
	J30	**87-02 →**	**8700008**	**Bushing**	**1**
	J50	**87-02 →**	**9004104-1580**	**O-ring**	**1**
	J60	87-02 →	8800173	Flange adaptor	1
	J70	87-02 →	9009625-0132	Washer	4
	J80	89-46 →	9007314-1623	Screw **(SB-8923)**	4
	“	*87-02 → 89-45*	*9007314-1624*	*Screw*	*4*
	J90	**87-02 →**	**9004104-0440**	**O-ring**	**1**
	J40	*87-02 → 92-29*	*9004104-0440*	*O-ring*	*1*
	J92	87-02 →	4460370	Cover plate	1
	J95	87-02 →	9007200-5021	Screw	2
C	J	87-02 →	8202J00C-A	Aux. mtg. C flange kit, 14T	1
	J10	87-02 →	8100149	Coupling	1
	J15	**87-02 →**	**8800832**	**Cover assy., CW (SB-9301*)**	**1**
	“	**87-02 →**	**8800833**	**Cover assy., CCW (SB-9301*)**	**1**
	J30	**87-02 →**	**8700008**	**Bushing**	**1**
	J50	**87-02 →**	**9004104-1580**	**O-ring**	**1**
	J60	87-02 →	723205	Flange adaptor	1
	J70	87-02 →	9009625-0132	Washer	4
	J80	89-46 →	9007314-1623	Screw **(SB-8923)**	4
	“	*87-02 → 89-45*	*9007314-1624*	*Screw*	*4*
	J90	**87-02 →**	**9004100-0480**	**O-ring**	**1**
	J40	*87-02 → 92-29*	*9004104-0440*	*O-ring*	*1*
	J92	87-02 →	8800406	Cover plate	1
	J95	87-02 →	9007200-5021	Screw	4

*** The new style covers are interchangable with either charge pump design**

Bold Items indicate recommended parts to be stocked for servicing

Auxiliary Mounting Pad



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

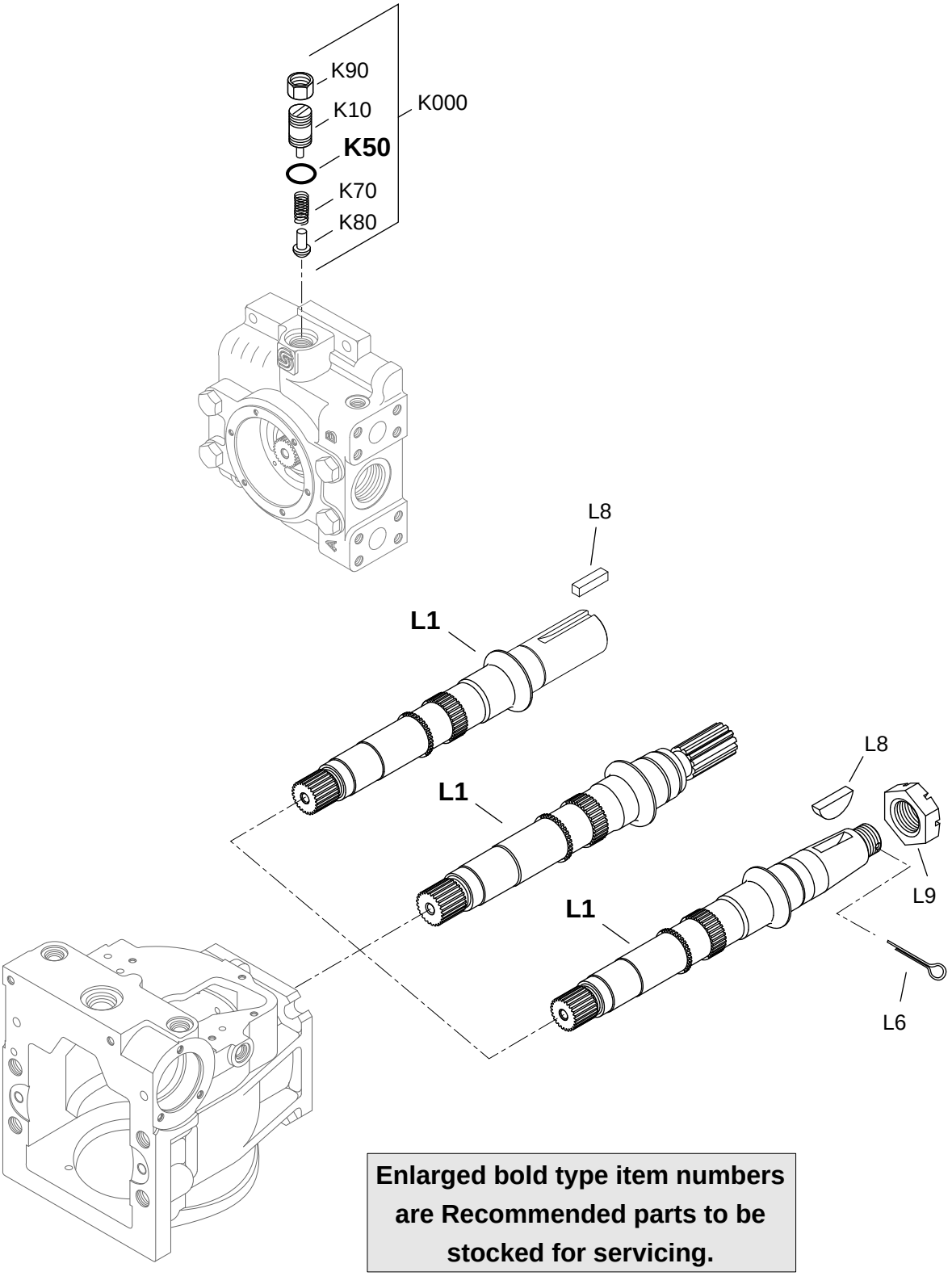
100 cc Variable Displacement Pump

J: Auxiliary Mounting Pad Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
N	**J15N**	**87-02 →**	**8800834**	**Charge pump cover (SB-9301*)**	**1**
	J30	**87-02 →**	**8700008**	**Bushing**	**1**
	J40N	**87-02 →**	**9004104-0440**	**O-ring**	**1**
	J80N	89-46 →	9007210-1621	Screw **(SB-8923)**	4
	“	*87-02 → 89-45*	*9007210-1622*	*Screw*	*4*
T	J	87-02 →	8202J00T-A	Aux. mtg. A flange kit, 11T	1
	J10	87-02 →	8100297	Coupling	1
	J15	**87-02 →**	**8800832**	**Cover assy., CW (SB-9301*)**	**1**
	“	**87-02 →**	**8800833**	**Cover assy., CCW (SB-9301*)**	**1**
	J30	**87-02 →**	**8700008**	**Bushing**	**1**
	J50	**87-02 →**	**9004104-1580**	**O-ring**	**1**
	J60	87-02 →	8800172	Flange adaptor	1
	J70	87-02 →	9009625-0132	Washer	4
	J80	89-46 →	9007314-1623	Screw **(SB-8923)**	4
	“	*87-02 → 89-45*	*9007314-1624*	*Screw*	*4*
	J90	**87-02 →**	**9004100-0420**	**O-ring**	**1**
	J40	*87-02 → 92-29*	*9004104-0440*	*O-ring*	*1*
	J92	87-02 →	9802336	Cover plate	1
	J95	87-02 →	9007200-3714	Screw	2
V	J	87-02 →	8202J00V-A	Aux. mtg. B-B flange kit, 15T	1
	J10	87-02 →	8100273	Coupling	1
	J15	**87-02 →**	**8800832**	**Cover assy., CW (SB-9301*)**	**1**
	“	**87-02 →**	**8800833**	**Cover assy., CCW (SB-9301*)**	**1**
	J30	**87-02 →**	**8700008**	**Bushing**	**1**
	J50	**87-02 →**	**9004104-1580**	**O-ring**	**1**
	J60	87-02 →	8800173	Flange adaptor	1
	J70	87-02 →	9009625-0132	Washer	4
	J80	89-46 →	9007314-1623	Screw **(SB-8923)**	4
	“	*87-02 → 89-45*	*9007314-1624*	*Screw*	*4*
	J90	**87-02 →**	**9004104-0440**	**O-ring**	**1**
	J40	*87-02 → 92-29*	*9004104-0440*	*O-ring*	*1*
	J92	87-02 →	4460370	Cover plate	1
	J95	87-02 →	9007200-5021	Screw	2

Bold Items indicate recommended parts to be stocked for servicing

Shaft



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100 cc Variable Displacement Pump

K: Charge Pressure Setting

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
00-30	K000	87-02 →	8002K000-A	Adj. charge relief kit **(SB-8902)**	1
	K10	87-02 →	8800488-2000	Plug assembly **(SB-8902)**	1
	K50	**87-02 →**	**9004201-6200**	**O-ring (SB-8902)**	**1**
	K70	87-02 →	8800197	Spring, 10-30 bar **(SB-8902)**	1
	K80	87-02 →	8800449	Poppet **(SB-8902)**	1
	K90	87-02 →	9003575-0101	Nut **(SB-8902)**	1
31-42	K10	94-13 →	8800488-2000	Plug assembly	1
	K50	**94-13 →**	**9004201-6200**	**O-ring**	**1**
	K70	94-13 →	344127	Spring, 31-42 bar	1
	K80	94-13 →	8800449	Poppet	1
	K90	94-13 →	9003575-0101	Nut	1

L: Shaft Group

C7	**L1**	**89-46 →**	**8200169**	**Shaft, 23 t 16/32 (SB-8923)**	**1**
	"	*87-02 → 89-45*	*8200119*	*Shaft, 23 t 16/32*	*1*
F1	**L1**	**89-46 →**	**8200170**	**Shaft, 13 t 8/16 (SB-8923)**	**1**
	"	*87-02 → 89-45*	*8200118*	*Shaft, PV, 13 t 8/16*	*1*
K3	**L1**	**89-46 →**	**8200176**	**Shaft, 1.750 str. key (SB-8923)**	**1**
	"	*87-02 → 89-45*	*8200164*	*Shaft, 1.750 str. key*	*1*
	L8	87-02 →	9003261-3724	Key	1
S1	**L1**	**89-46 →**	**8200171**	**Shaft, 14 t 12/24 (SB-8923)**	**1**
	"	*87-02 → 89-45*	*8200143*	*Shaft, 14 t 12/24*	*1*
TF	**L1**	**89-46 →**	**8200179**	**Shaft, tapered spline (SB-8923)**	**1**
	"	*87-02 → 89-45*	*8200132*	*Shaft, tapered spline*	*1*
	L9	87-02 →	9700189	Slotted nut	1
T2	**L1**	**89-46 →**	**8200173**	**Shaft, 1.500 tapered (SB-8923)**	**1**
	"	*87-02 → 89-45*	*8200133*	*Shaft, 1.500 tapered*	*1*
	L6	87-02 →	9004600-1230	Cotter pin	1
	L8	87-02 →	9003310-3724	Key	1
	L9	87-02 →	9700169	Slotted nut	1

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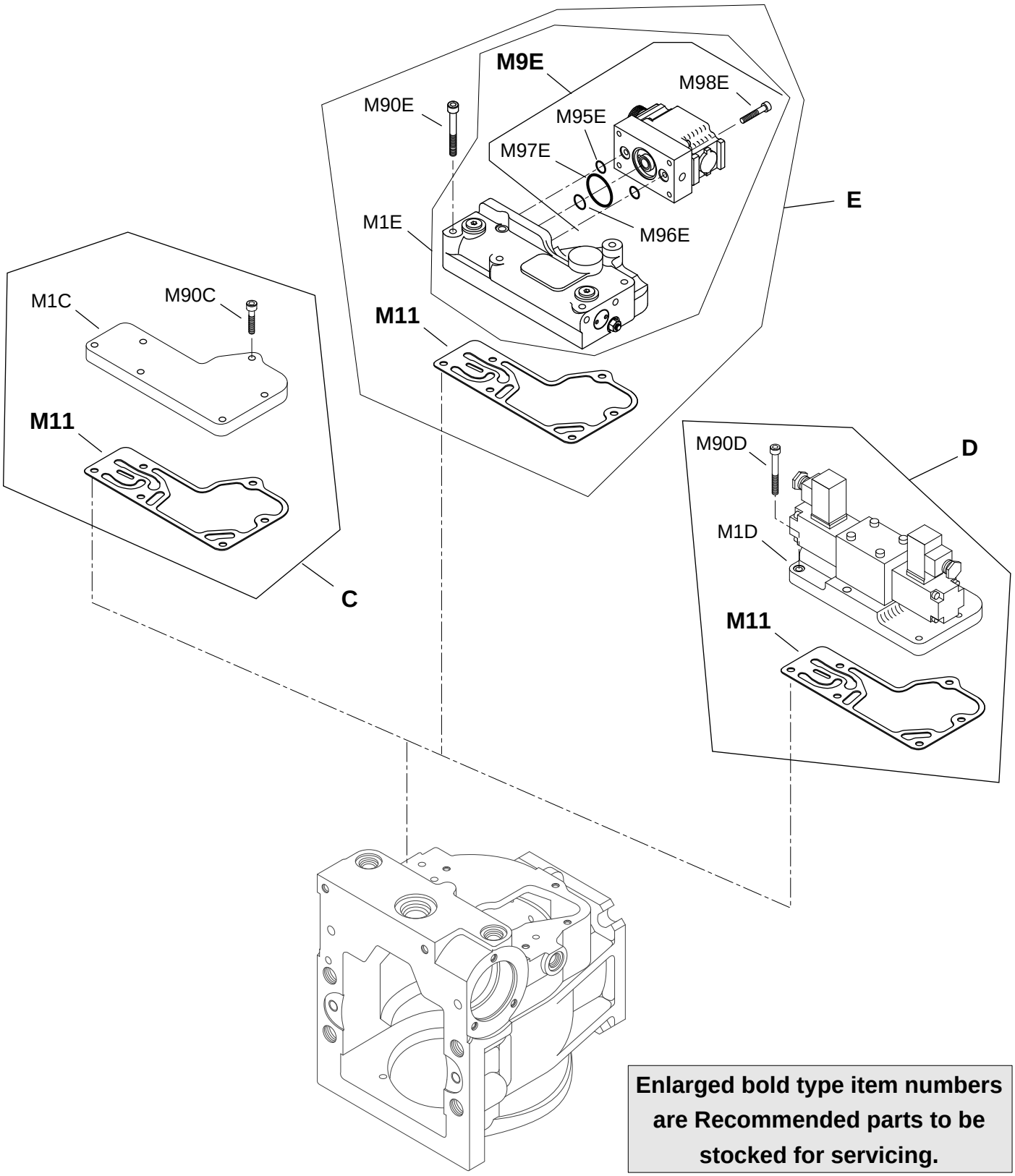
Control



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

100 cc Variable Displacement Pump

M: Control Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
CA	C	87-02 →	8102M0CA-A	Control cover plate kit	1
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1C	87-02 →	8800336	Cover plate	1
	M90C	87-02 →	9007314-0606	Screw	6
			(No feedback link on Swashplate)		
CB	C	87-02 →	8102M0CA-A	Control cover plate kit	1
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1C	87-02 →	8800336	Cover plate	1
	M90C	87-02 →	9007314-0606	Screw	6
			(Feedback link on Swashplate)		
DC	**D**	**87-02 →**	**8102M0DC-A**	**Control kit,3 position sol.,12v**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1D	87-02 →	344010	Control, 3 position, 12v	1
	M90D	87-02 →	9007314-0606	Screw	6
DD	**D**	**87-02 →**	**8102M0DD-A**	**Control kit,3 position sol.,24v**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1D	87-02 →	354159	Control, 3 position, 24v	1
	M90D	87-02 →	9007314-0606	Screw	6
EA	**E**	**87-02 →**	**8202M0EA-B**	**EDC kit w/MS connector**	**1**
	M11	87-02 →	**8800923**	**Control gasket**	**1**
	M1E	87-02 →	MCV111B1002	EDC, MS connector	1
	M9E	87-02 →	**MCV110A1017**	**PCP type 3 oil filled**	**1**
	M95E	87-02 →	9004104-0120	O-ring	2
	M96E	87-02 →	9004104-0140	O-ring	1
	M97E	87-02 →	9004104-0240	O-ring	1
	M98E	87-02 →	9007315-0504	Screw	4
	M90E	87-02 →	9007314-0611	Screw	6
EN	**M11**	87-02 →	**8800923**	**Control gasket**	**1**
	M1E	**87-02 →**	**MCV114A1007**	**EDC, MS connector**	**1**
	M9E	87-02 →	**MCV116A3501**	**PCP type 3, oil filled, MS conn.**	**1**
	M95E	87-02 →	9004104-0120	O-ring	2
	M96E	87-02 →	9004104-0140	O-ring	1
	M97E	87-02 →	9004104-0240	O-ring	1
	M98E	87-02 →	9007315-0504	Screw	4
	M90E	87-02 →	9007314-0611	Screw	6
EP	**E**	**87-02 →**	**8202M0EP-B**	**EDC kit w/packard connector**	**1**
	M11	87-02 →	**8800923**	**Control gasket**	**1**
	M1E	87-02 →	MCV111B1004	EDC1, packard connector	1
	M9E	87-02 →	**MCV110A1058**	**PCP type 3 oil filled**	**1**
	M95E	87-02 →	9004104-0120	O-ring	2
	M96E	87-02 →	9004104-0140	O-ring	1
	M97E	87-02 →	9004104-0240	O-ring	1
	M98E	87-02 →	9007315-0504	Screw	4
	M90E	87-02 →	9007314-0611	Screw	6

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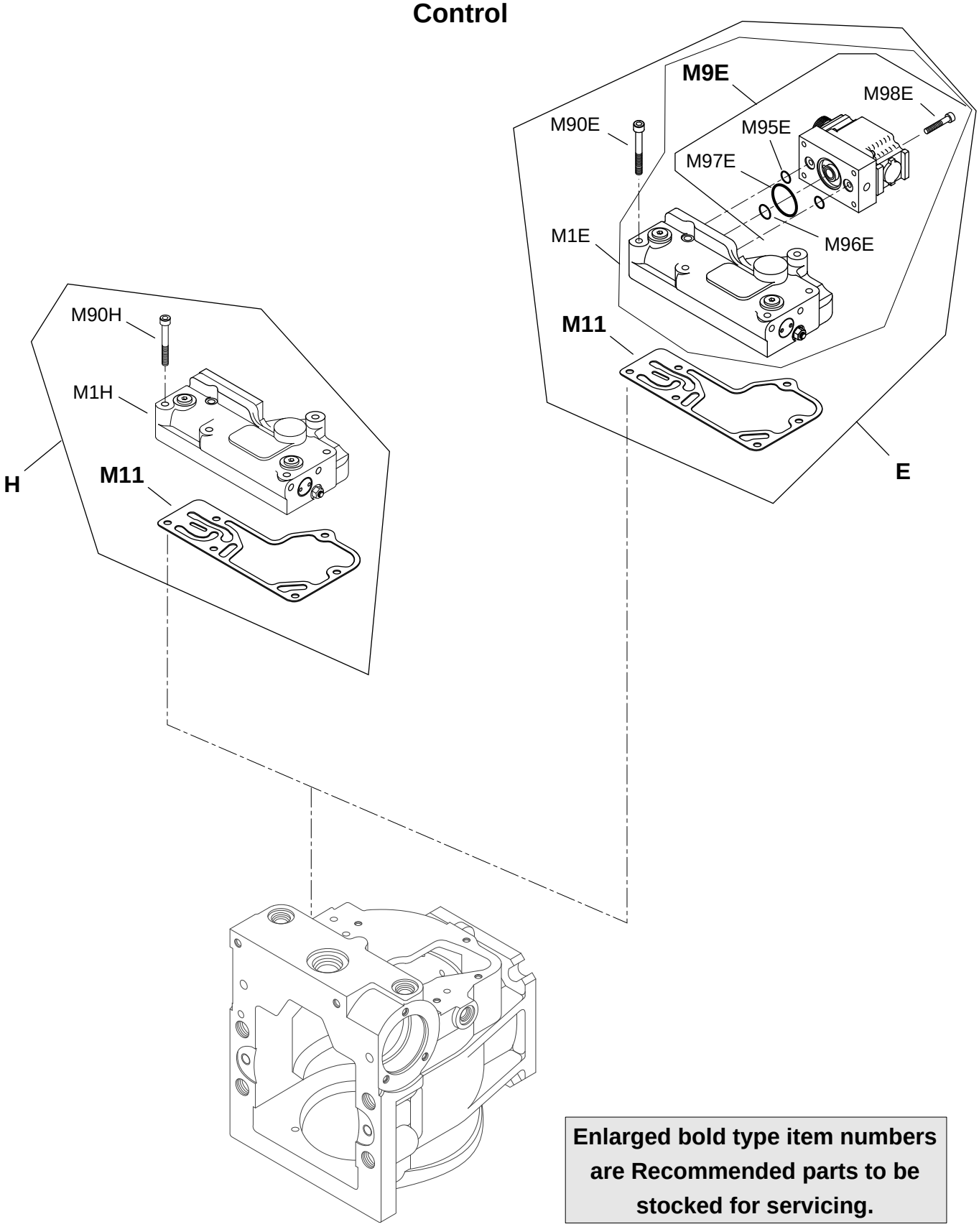
Control



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100 cc Variable Displacement Pump

M: Control Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
EX	**E**	**87-02 →**	**8202M0EX-B**	**EDC1 kit w/metri-pak connector**	**1**
	M11	87-02 →	**8800923**	**Control gasket**	**1**
	M1E	87-02 →	MCV111B1006	EDC1, metri-pak connector	1
	M9E	87-02 →	**MCV110A1090**	**PCP type 3 oil filled**	**1**
	M95E	87-02 →	9004104-0120	O-ring	2
	M96E	87-02 →	9004104-0140	O-ring	1
	M97E	87-02 →	9004104-0240	O-ring	1
	M98E	87-02 →	9007315-0504	Screw	4
	M90E	87-02 →	9007314-0611	Screw	6
EZ	**M11**	87-02 →	**8800923**	**Control gasket**	**1**
	M1E	87-02 →	MCV111E1002	EDC, ms connector	1
	M9E	87-02 →	**MCV110A1017**	**PCP type 3 oil filled**	**1**
	M95E	87-02 →	9004104-0120	O-ring	2
	M96E	87-02 →	9004104-0140	O-ring	1
	M97E	87-02 →	9004104-0240	O-ring	1
	M98E	87-02 →	9007315-0504	Screw	4
	M90E	87-02 →	9007314-0611	Screw	6
HF	**H**	**87-02 →**	**8202M0HF-A**	**HDC2, 3-11 bar**	**1**
	M1H	87-02 →	MCV115A1003	HDC2, 3-11 bar (44-160 psi)	1
	M11	**87-02 →**	**K11420**	**Control gasket (SB-9302)**	**1**
	M90H	87-02 →	9007314-0611	Screw	6
HK	**H**	**87-02 →**	**8202M0HK-A**	**HDC2, 1-11 bar**	**1**
	M1H	87-02 →	MCV115A1002	HDC2, 1-11 bar	1
	M11	**87-02 →**	**K11420**	**Control gasket (SB-9302)**	**1**
	M90H	87-02 →	9007314-0611	Screw	6
HM	**H**	**87-02 →**	**8202M0HM-A**	**HDC, 1.1-6.7 bar**	**1**
	M1H	87-02 →	MCV115A1001	HDC2, 1-11 bar	1
	M11	**87-02 →**	**K11420**	**Control gasket (SB-9302)**	**1**
	M90H	87-02 →	9007314-0611	Screw	6
HS	**H**	**87-02 →**	**8202M0HS-A**	**HDC, 6-18 bar**	**1**
	M1H	87-02 →	MCV115E1008	HDC2, 6-18 bar	1
	M11	**87-02 →**	**K11420**	**Control gasket (SB-9302)**	**1**
	M90H	87-02 →	9007314-0611	Screw	6
HT	**M11**	**87-02 →**	**K11420**	**Control gasket (SB-9302)**	**1**
	M1H	**87-02 →**	**MCV115A1002**	**HDC, 4-16 bar**	**1**
	M90H	87-02 →	9007314-0611	Screw	6

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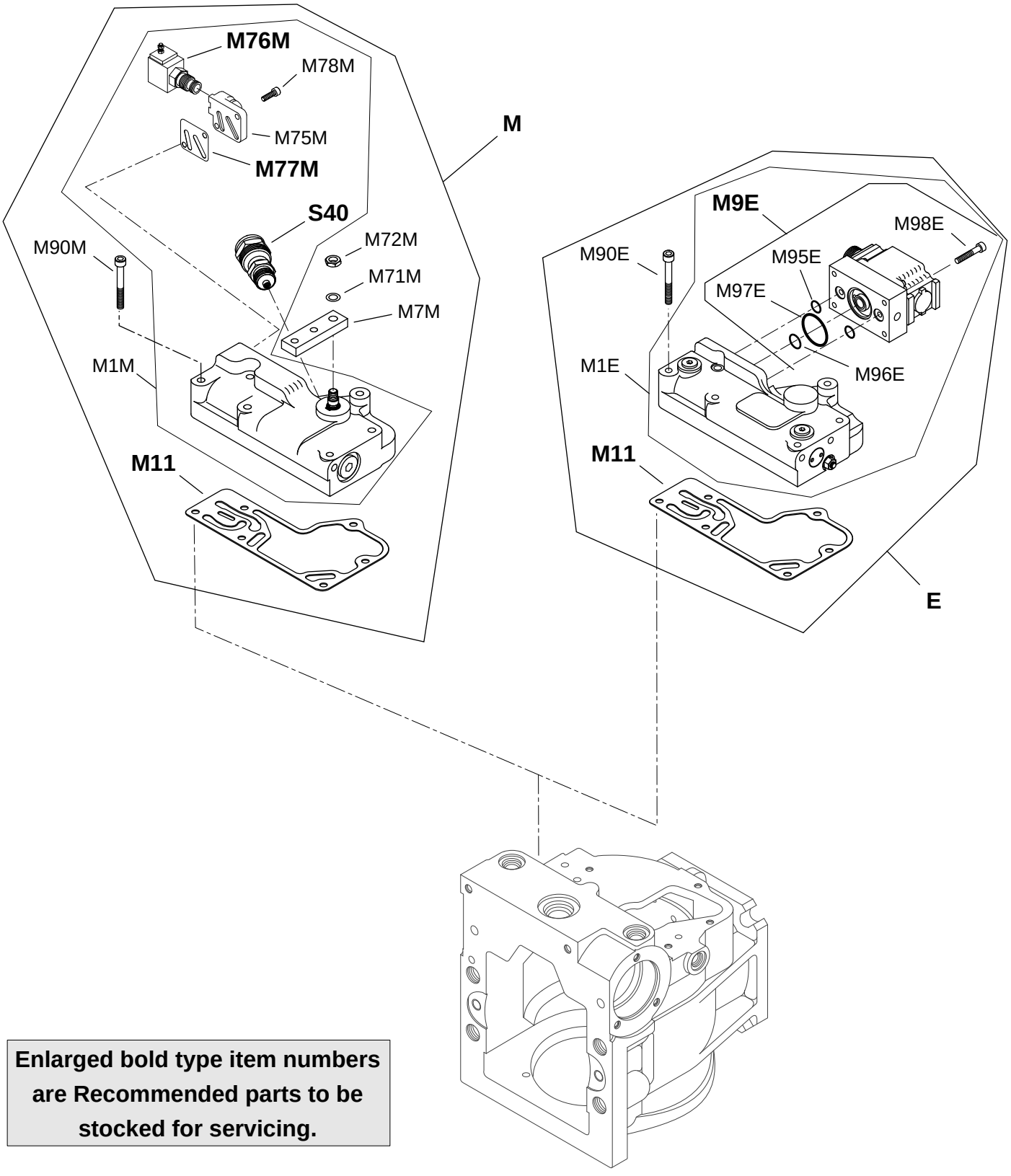
Control



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100 cc Variable Displacement Pump

M: Control Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
KP	**M11**	87-02 →	**8800923**	**Control gasket**	**1**
	M1E	87-02 →	KVEAB104	EDC, weather pack connector	1
	M9E	87-02 →	**MCV116F4204**	**PCP type 3 oil filled**	**1**
	M95E	87-02 →	9004104-0120	O-ring	2
	M96E	87-02 →	9004104-0140	O-ring	1
	M97E	87-02 →	9004104-0240	O-ring	1
	M98E	87-02 →	9007315-0504	Screw	4
	M90E	87-02 →	9007314-0611	Screw	6
MA	**M**	**87-02 →**	**8102M0MA-A**	**MDC kit w/o neutral start**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1M	87-02 →	8800630	MDC w/o neutral start switch	1
	M7M	87-02 →	9800916	Control handle	1
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M90M	87-02 →	9007314-0611	Screw	6
MB	**M**	**87-02 →**	**8102M0MB-A**	**MDC kit with neutral start**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1M	87-02 →	8800631	MDC with neutral start switch	1
	M7M	87-02 →	9800916	Control handle	1
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M90M	87-02 →	9007314-0611	Screw	6
	S40	**87-02 →**	**80020S40**	**Neutral start switch kit**	**1**
MC	**M**	**87-02 →**	**8102M0MC-A**	**MDC kit w/sol. valve**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1M	87-02 →	8800633	MDC with solenoid valve	1
	M7M	87-02 →	9800916	Control handle	1
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M75M	95-10→	505022	Control manifold **(SB-9503)**	1
	M76M	**87-02 →**	**9700803**	**Solenoid valve, 12v, double screw**	**1**
	M77M	**87-02 →**	**8800882**	**Manifold gasket**	**1**
	M78M	95-10 →	9007314-0606	Screw **(SB-9503)**	2
	"	*87-02 → 95-09*	*9007314-0605*	*Screw*	*2*
	M90M	87-02 →	9007314-0611	Screw	6

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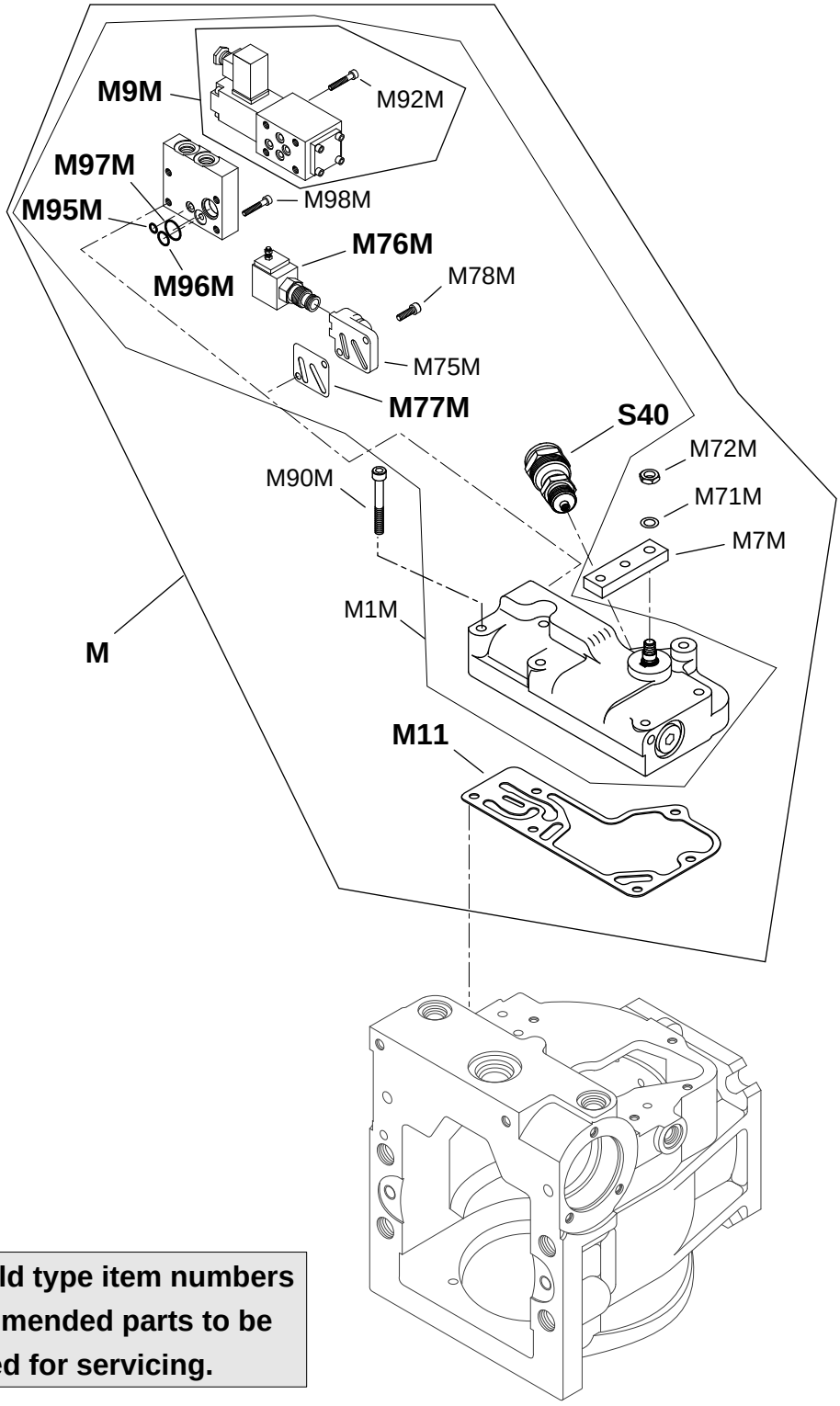
Control



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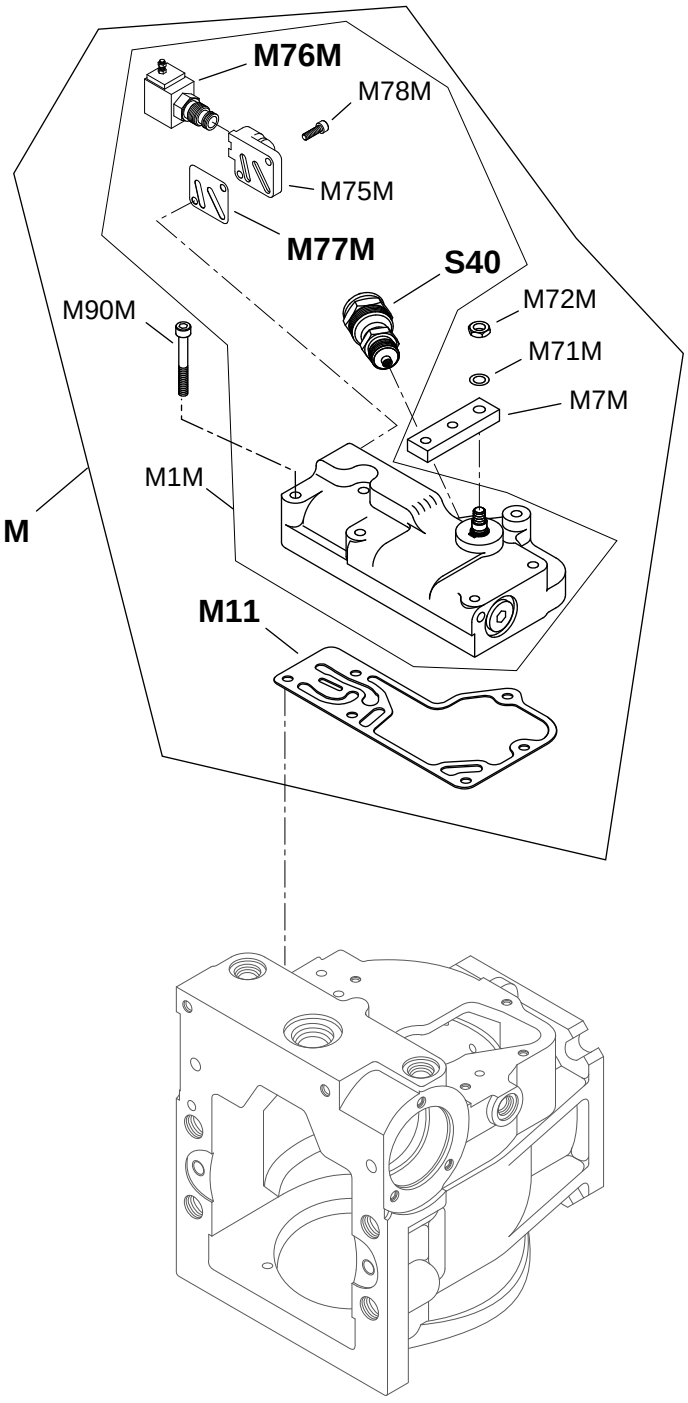
100 cc Variable Displacement Pump

M: Control Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
MD	**M**	**87-02 →**	**8102M0MD-A**	**MDC w/12v sol. valve, nss**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1M	87-02 →	8800632	MDC with sol. valve, nss	1
	M7M	87-02 →	9800916	Control handle	1
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M75M	95-10→	505022	Control manifold **(SB-9503)**	1
	M76M	**87-02 →**	**9700886**	**Solenoid valve, 12v**	**1**
	M77M	**87-02 →**	**8800882**	**Manifold gasket**	**1**
	M78M	95-10 →	9007314-0606	Screw **(SB-9503)**	2
	"	*87-02 → 95-09*	*9007314-0605*	*Screw*	*2*
	M90M	87-02 →	9007314-0611	Screw	6
	S40	**87-02 →**	**80020S40**	**Neutral start switch kit**	**1**
ME	**M**	**87-02 →**	**8102M0ME-A**	**MDC w/2 position sol. valve**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1M	87-02 →	347740	MDC with 2 position sol. valve	1
	M7M	87-02 →	9800916	Control handle	1
	M9M	**87-02 →**	**8510107**	**Solenoid valve, 12v (SB-9510)**	**1**
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M90M	87-02 →	9007314-0611	Screw	6
	M92M	95-24 →	9007315-0507	Screw **(SB-9510)**	4
	M92M	*87-02 → 95-23*	*9007315-0510*	*Screw*	*4*
	M95M	**87-02 →**	**9004105-0140**	**O-ring**	**1**
	M96M	**87-02 →**	**9004105-0140**	**O-ring**	**1**
	M97M	**87-02 →**	**9004105-0190**	**O-ring**	**1**
	M98M	87-02 →	9007315-0505	Metric screw	4
MK	**M**	**87-02 →**	**8102M0MK-A**	**MDC kit, wide deadband, nss**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M1M	87-02 →	8800634	MDC, wide deadband, nss	1
	M7M	87-02 →	9800916	Control handle	1
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M90M	87-02 →	9007314-0611	Screw	6
	S40	**87-02 →**	**80020S40**	**Neutral start switch kit**	**1**
ML	**M1**	**87-02 →**	**8800813**	**MDC, high force nss**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M7M	87-02 →	9800916	Control handle	1
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M90M	87-02 →	9007314-0611	Screw	6
	S40	**87-02 →**	**8510027**	**Neutral start switch kit**	**1**

Bold Items indicate recommended parts to be stocked for servicing

Control



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

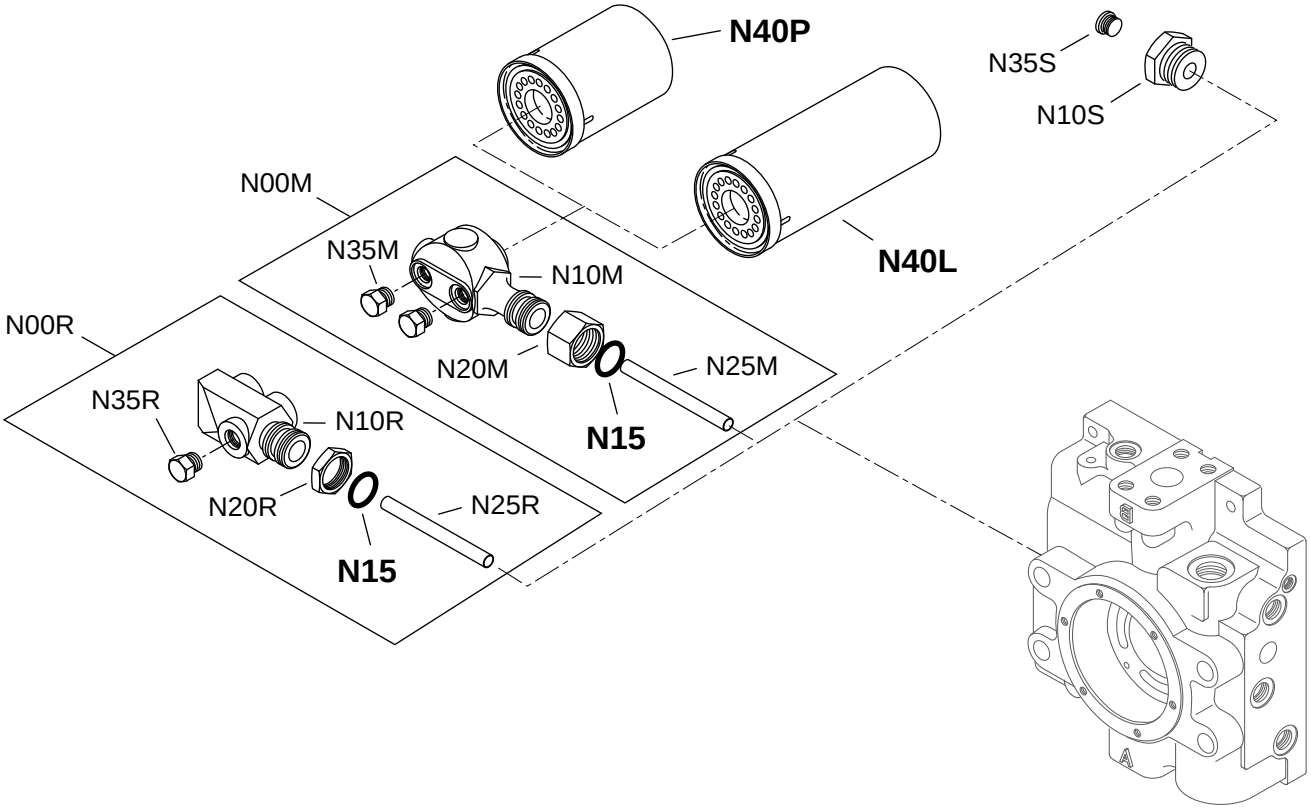
100 cc Variable Displacement Pump

M: Control Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
MS	**M1**	**87-02 →**	**8800864**	**MDC, high force nss**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M7M	87-02 →	9800916	Control handle	1
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M90M	87-02 →	9007314-0611	Screw	6
	S40	**87-02 →**	**8510027**	**Neutral start switch kit**	**1**
MT	**M1**	**95-19 →**	**8800919**	**MDC, 12v override**	**1**
	M11	**95-19 →**	**8800923**	**Control gasket**	**1**
	M7M	95-19 →	9800916	Control handle	1
	M71M	95-19 →	9009660-3100	Washer	1
	M72M	95-19 →	9003513-0800	Nut	1
	M75M	95-19 →	505022	Control manifold	1
	M76M	**95-19 →**	**9700886**	**Solenoid valve, 12v**	**1**
	M77M	**95-19 →**	**8800882**	**Manifold gasket**	**1**
	M78M	95-19 →	9007314-0606	Screw	2
	M90M	95-19 →	9007314-0611	Screw	6
MU	**M1**	**87-02 →**	**8800870**	**MDC, 12v override, nss**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M7M	87-02 →	9800916	Control handle	1
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M75M	95-10→	505022	Control manifold **(SB-9503)**	1
	M76M	**87-02 →**	**9700886**	**Solenoid valve, 12v**	**1**
	M77M	**87-02 →**	**8800882**	**Manifold gasket**	**1**
	M78M	95-10 →	9007314-0606	Screw **(SB-9503)**	2
	"	*87-02 → 95-09*	*9007314-0605*	*Screw*	*2*
	M90M	87-02 →	9007314-0611	Screw	6
	S40	**87-02 →**	**8700115**	**Neutral start switch only**	**1**
MV	**M1**	**87-02 →**	**8800845**	**MDC, 12v override, nss**	**1**
	M11	**87-02 →**	**8800923**	**Control gasket**	**1**
	M7M	87-02 →	9800916	Control handle	1
	M71M	87-02 →	9009660-3100	Washer	1
	M72M	87-02 →	9003513-0800	Nut	1
	M90M	87-02 →	9007314-0611	Screw	6
	S40	**87-02 →**	**8700115**	**Neutral start switch only**	**1**

Bold Items indicate recommended parts to be stocked for servicing

Filtration



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

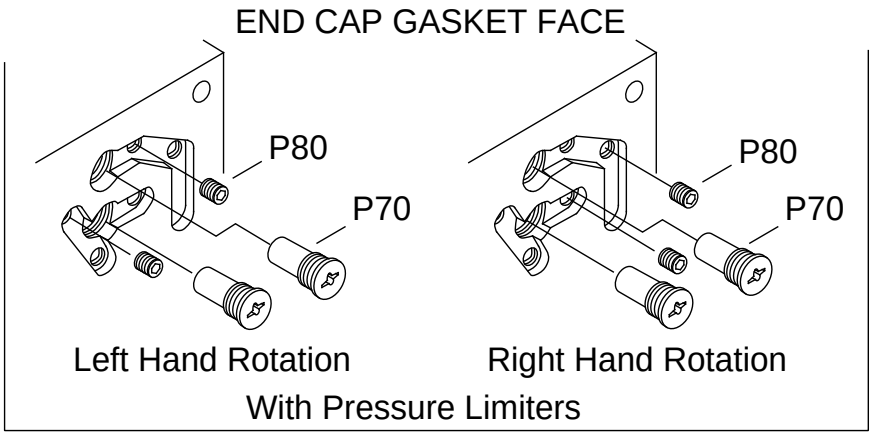
100 cc Variable Displacement Pump

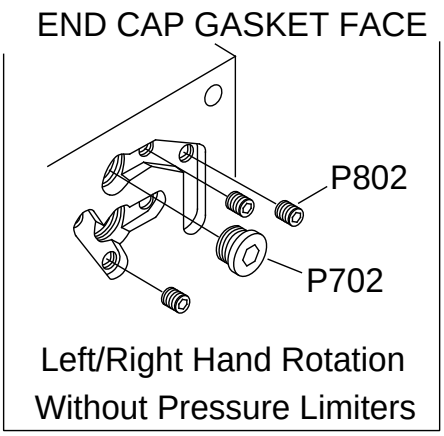
N: Filtration Group

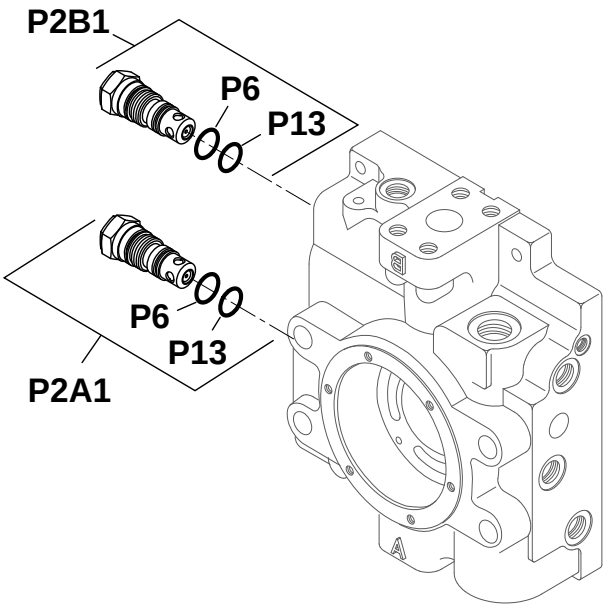
Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
L	N00M	87-02 →	8002N00M-A	Filtration manifold kit	1
	N10M	87-02 →	8800896	Manifold **(SB-9436)**	1
	N15	**87-02 →**	**9004201-9000**	**O-ring**	**1**
	N20M	95-18 →	5000222	Nut **(SB-9436)**	1
	N20M	87-02 → 95-17	9002863-1600	Nut	1
	N25M	87-02 →	8800180	Tube	1
	N35M	87-02 →	9005100-5600	Plug	2
	N40L	**87-02 →**	**8700068**	**Filter, long**	**1**
M	N00M	87-02 →	8002N00M-A	Filtration manifold kit	1
	N10M	87-02 →	8800896	Manifold **(SB-9436)**	1
	N15	**87-02 →**	**9004201-9000**	**O-ring**	**1**
	N20M	95-18 →	5000222	Nut **(SB-9436)**	1
	N20M	87-02 → 95-17	9002863-1600	Nut	1
	N25M	87-02 →	8800180	Tube	1
	N35M	87-02 →	9005100-5600	Plug	2
P	N00M	87-02 →	8002N00M-A	Filtration manifold kit	1
	N10M	87-02 →	8800896	Manifold **(SB-9436)**	1
	N15	**87-02 →**	**9004201-9000**	**O-ring**	**1**
	N20M	95-18 →	5000222	Nut **(SB-9436)**	1
	N20M	87-02 → 95-17	9002863-1600	Nut	1
	N25M	87-02 →	8800180	Tube	1
	N35M	87-02 →	9005100-5600	Plug	2
	N40P	**87-02 →**	**9700810**	**Filter, short**	**1**
R	N00R	87-02 →	8002N00R-A	Filtration manifold kit **(SB-8824)**	1
	N10R	87-02 →	350777	Manifold **(SB-8824)**	1
	N15	**87-02 →**	**9004201-9000**	**O-ring**	**1**
	N20R	87-02 →	9002863-1600	Nut	1
	N25R	87-02 →	8800210	Tube	1
	N35R	87-02 →	9005100-5600	Plug	1
S	N10S	87-02 →	5000230	Reducer fitting	1
	N35S	87-02 →	9005110-5600	Plug	1

Bold Items indicate recommended parts to be stocked for servicing

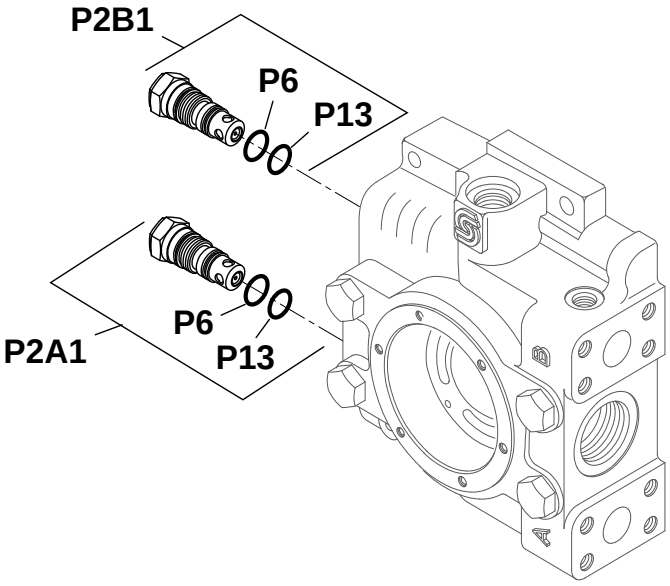
High Pressure Regulation







Side Port End Cap



Twin Port End Cap

Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

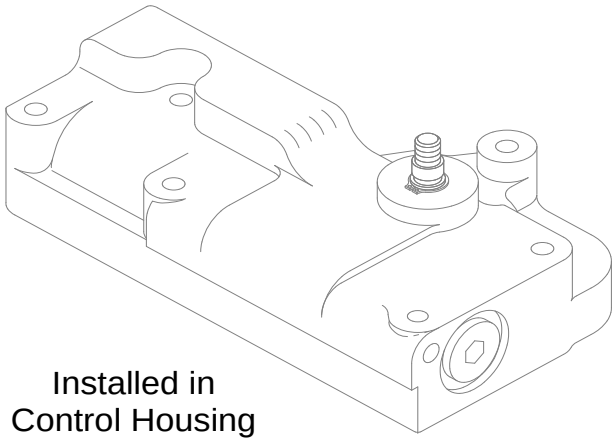
100 cc Variable Displacement Pump

P: High Pressure Regulation Group

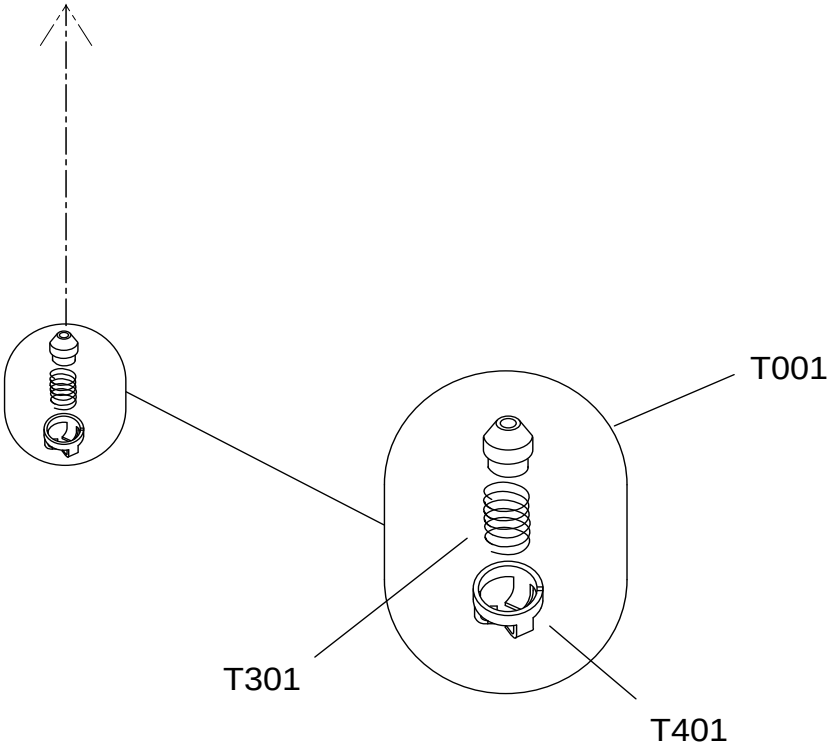
Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
1	**P2A1**	**87-02 →**	**8510022-1**	**Multi-function valve kit** (w/PL)	**1**
(Range 1)	**P2B1**	**87-02 →**	**8510022-1**	**Multi-function valve kit**	**1**
	P6	**87-02 →**	**9004100-0200**	**O-ring**	**2**
	P13	**87-02 →**	**9004105-0190**	**O-ring**	**2**
	P70	87-02 →	8800188	Check valve	2
	P80	87-02 →	9005475-0004	Special plug	2
2	**P2A1**	**87-02 →**	**8510022-2**	**Multi-function valve kit** (w/o PL)	**1**
(Range 1)	**P2B1**	**87-02 →**	**8510022-2**	**Multi-function valve kit**	**1**
	P6	**87-02 →**	**9004100-0200**	**O-ring**	**2**
	P13	**87-02 →**	**9004105-0190**	**O-ring**	**2**
	P702	87-02 →	9005110-4400	Plug	1
	P802	87-02 →	9005475-0004	Special plug	3
6	**P2A1**	**87-02 →**	**8510022-6**	**Multi-function valve kit** (w/PL)	**1**
(Range 2)	**P2B1**	**87-02 →**	**8510022-6**	**Multi-function valve kit**	**1**
	P6	**87-02 →**	**9004100-0200**	**O-ring**	**2**
	P13	**87-02 →**	**9004105-0190**	**O-ring**	**2**
	P70	87-02 →	8800188	Check valve	2
	P80	87-02 →	9005475-0004	Special plug	2
7	**P2A1**	**87-02 →**	**8510022-7**	**Multi-function valve kit** (w/o PL)	**1**
(Range 2)	**P2B1**	**87-02 →**	**8510022-7**	**Multi-function valve kit**	**1**
	P6	**87-02 →**	**9004100-0200**	**O-ring**	**2**
	P13	**87-02 →**	**9004105-0190**	**O-ring**	**2**
	P702	87-02 →	9005110-4400	Plug	1
	P802	87-02 →	9005475-0004	Special plug	3

Bold Items indicate recommended parts to be stocked for servicing

Orifice



Installed in
Control Housing

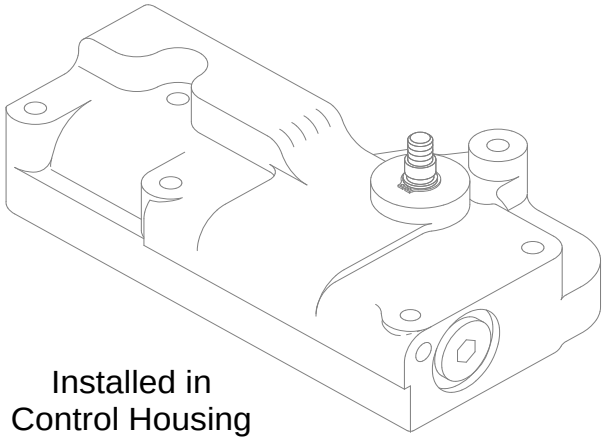


100 cc Variable Displacement Pump

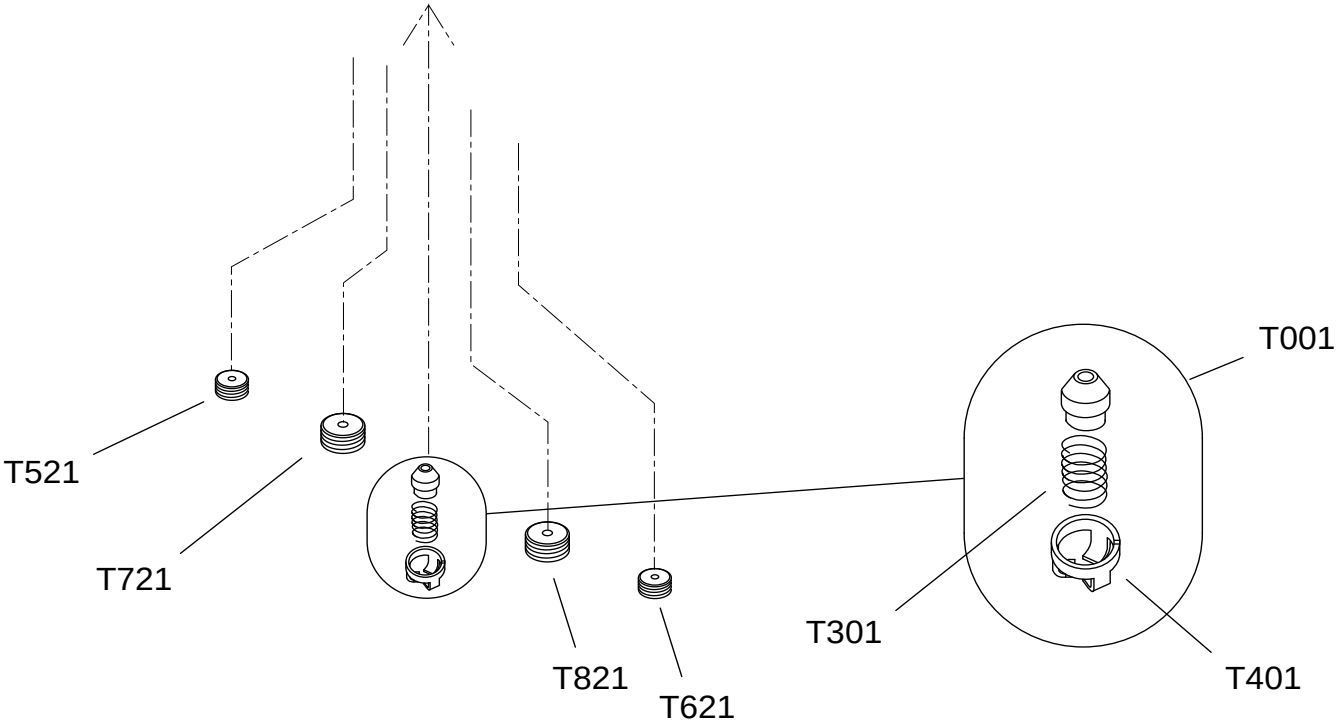
T: Orifice Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
01	T001	87-02 →	8002T001-A	Control orifice kit - .018	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1
02	T001	87-02 →	8002T002-A	Control orifice kit - .026	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1
03	T001	87-02 →	8002T003-A	Control orifice kit - .032	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1
04	T001	87-02 →	8002T004-A	Control orifice kit - .040	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1
05	T001	87-02 →	8002T005-A	Control orifice kit - .054	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1
06	T001	87-02 →	8002T006-A	Control orifice kit - .062	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1
09	T001	87-02 →	8002T009-A	Control orifice kit - .092	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1
22	T001	87-02 →	8002T022-A	Control orifice kit - .022	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1

Orifice



Installed in
Control Housing

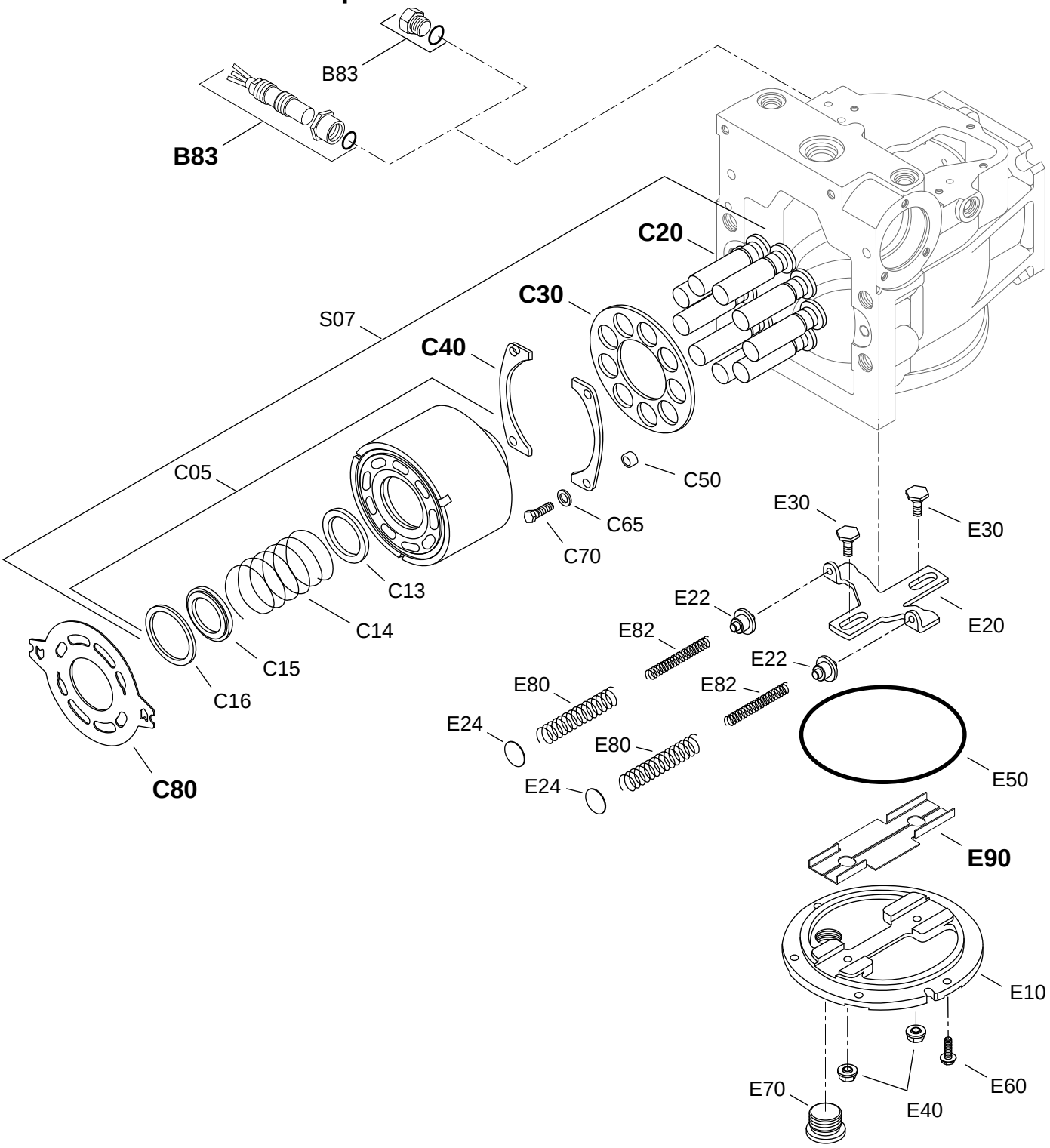


100 cc Variable Displacement Pump

T: Orifice Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
28	T001	87-02 →	8002T002-A	Control orifice kit - .026	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1
	T521	87-02 →	639104	Orifice plug, .7mm M5 x 6	1
	T621	87-02 →	639104	Orifice plug, .7mm M5 x 6	1
	T721	87-02 →	704650	Orifice plug, .7mm M8 x 8	1
	T821	87-02 →	704650	Orifice plug, .7mm M8 x 8	1
29	T001	91-30 →	8002T003-A	Control orifice kit - .032	1
	T301	91-30 →	8700007	Spring	1
	T401	91-30 →	8800340	Spring retainer	1
	T521	91-30 →	639104	Orifice plug, .7mm, M5 x 6	1
	T621	91-30 →	639104	Orifice plug, .7mm, M5 x 6	1
35	T001	91-30 →	8002T003-A	Control orifice kit - .032	1
	T301	91-30 →	8700007	Spring	1
	T401	91-30 →	8800340	Spring retainer	1
	T521	91-30 →	598292	Orifice plug, .8mm, M5 x 6	1
	T621	91-30 →	598292	Orifice plug, .8mm, M5 x 6	1
	T721	87-02 →	714477	Orifice plug, .8mm M8 x 8	1
	T821	87-02 →	714477	Orifice plug, .8mm M8 x 8	1
36	T001	91-30 →	8002T003-A	Control orifice kit - .032	1
	T301	91-30 →	8700007	Spring	1
	T401	91-30 →	8800340	Spring retainer	1
	T721	87-02 →	704650	Orifice plug, .7mm M8 x 8	1
	T821	87-02 →	704650	Orifice plug, .7mm M8 x 8	1
50	T001	87-02 →	8002T002-A	Control orifice kit - .026	1
	T301	87-02 →	8700007	Spring	1
	T401	87-02 →	8800340	Spring retainer	1
	T721	87-02 →	521054	Orifice plug, .9mm	1
	T821	87-02 →	521054	Orifice plug, .9mm M8 x 8	1

Special Hardware Feature



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

100 cc Variable Displacement Pump

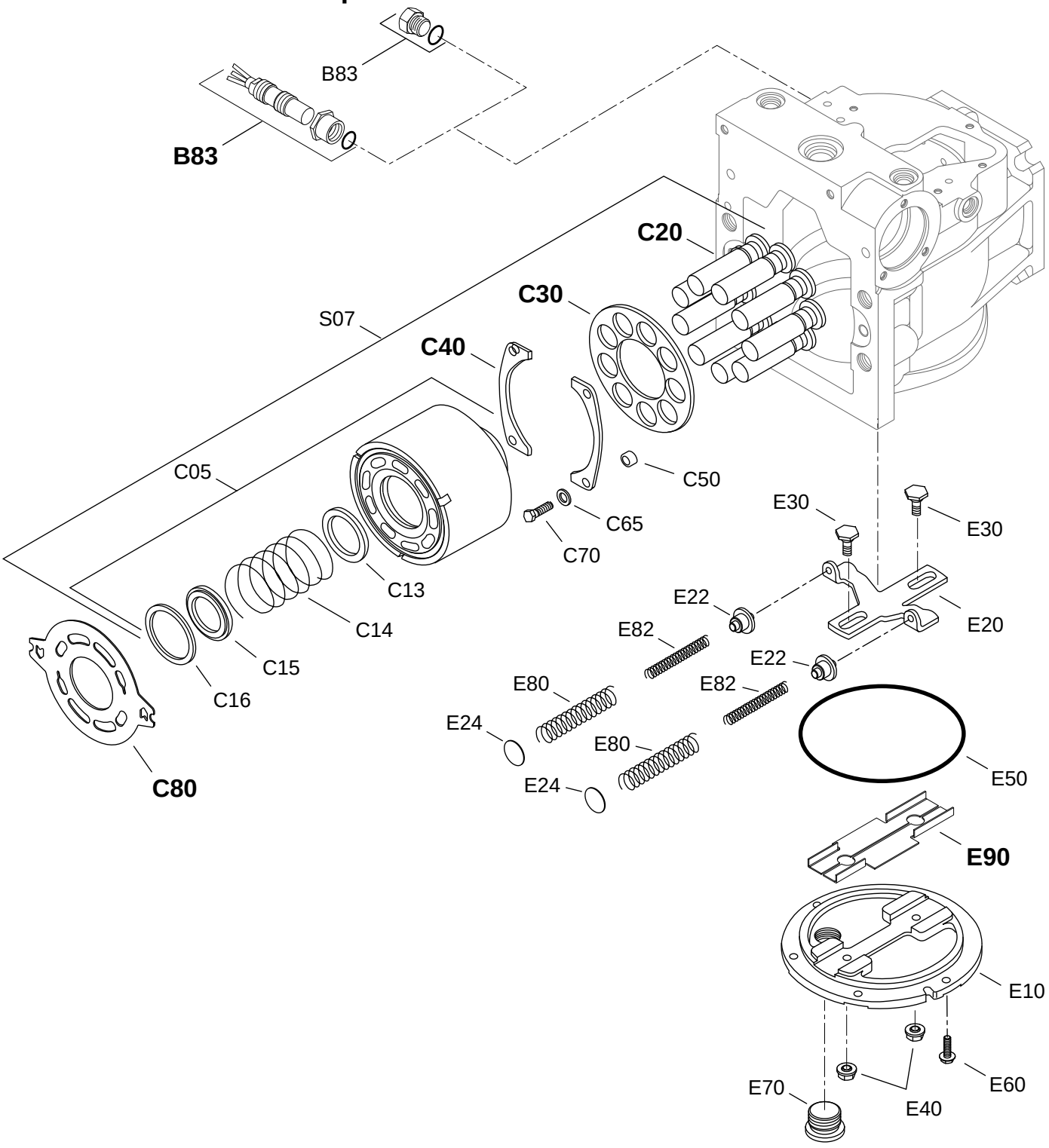
Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
	S07	87-02 →	82020S07	Cylinder. block kit, welded **(SB-9312)**	1
	C05	87-02 →	8200124	Cylinder block assy, w/o speed ring	1
	C13	87-02 →	8200027	Spring seat	1
	C14	87-02 →	8200210	Cylinder block spring	1
	C15	87-02 →	8200028	Spring retainer	1
	C16	87-02 →	9006275-0026	Retaining ring	1
	C20	**87-02 →**	**364000**	**Welded piston (SB-8823)**	**9**
	C30	**87-02 →**	**8200026**	**Slipper retainer**	**1**
	C40	**87-02 →**	**8200144**	**Slipper guide brg. (SB-8816)**	**1**
	C50	87-02 →	8200216	Spacer **(SB-8816)**	4
	C65	87-02 →	9009625-0159	Washer **(SB-8816)**	4
	C70	87-02 →	9007276-0099	Screw	4
	E10	95-50 →	501574	Side cover **(SB-9525)**	1
	"	*87-02 → 92-11*	*8200011*	*Side cover* **(SB-9203)**	*1*
	E20	87-02 →	8200007	Leveler **(SB-8903)**	1
	E22	87-02 →	358846	Spring Seat **(SB-8903)**	2
	E24	87-02 →	359059	Shim **(SB-8903)**	2
	E30	95-50 →	8000379	Guide post **(SB-9525)**	2
	"	87-02 → 95-49	8100353	Guide post	2
	E40	87-02 →	9003509-0008	Nut	2
	E50	87-02 →	9004104-1620	O-ring	1
	E60	87-02 →	5000206	Screw **(SB-9418)**	6
	E70	87-02 →	9005110-9000	Plug	1
	E80	87-02 →	8200174	Spring	2
	E90	95-50 →	8200321	Insert assembly **(SB-9525)**	1

W: Special Hardware Features Group

CAA & HNP	B83	87-02 →	9005110-5600	Plug	1
	C05	87-02 →	8200124	Cylinder block assy, w/o speed ring	1
	C20	**87-02 →**	**8200031**	**Hollow piston**	**9**
	C80	**87-02 →**	**8200041**	**Pump valve plate, -2 degree**	**1**
	S07	87-02 →	82020S05	Cylinder Block kit, hollow pistons	1
EDB	**B83**	**87-02 →**	**KPPB154**	**Speed sensor**	**1**
	C05	87-02 →	8200277	Cylinder block assy.,w/speed ring	1
	C80	**87-02 →**	**501327**	**Pump valve plate (SB-9515)**	**1**
FAA & NDN	B83	87-02 →	9005110-5600	Plug	1
	C05	87-02 →	8200124	Cylinder block assy, w/o speed ring	1
	C80	**87-02 →**	**8200041**	**Pump valve plate, -2 degree**	**1**
	E82	87-02 →	8200194	Spring	2
FAB & NBN	B83	87-02 →	9005110-5600	Plug	1
	C05	87-02 →	8200124	Cylinder block assy, w/o speed ring	1
	C80	**87-02 →**	**8200195**	**Pump valve plate, -3 degree**	**1**
	E82	87-02 →	8200194	Spring	2

Bold Items indicate recommended parts to be stocked for servicing

Special Hardware Feature



Enlarged bold type item numbers are Recommended parts to be stocked for servicing.

100 cc Variable Displacement Pump

W: Special Hardware Features Group

Order Code	Item	Date Code Begin → End	Part Number	Description	Qty. per Model/Kit
FAC & NMN	B83	87-02 →	9005110-5600	Plug	1
	C05	87-02 →	8200124	Cylinder block assy, w/o speed ring	1
	C80	**87-02 →**	**737478**	**Pump valve plate, 1.5 degree**	**1**
	E82	87-02 →	8200194	Spring	2
FAD & NSN	B83	87-02 →	9005110-5600	Plug	1
	C05	87-02 →	8200124	Cylinder block assy, w/o speed ring	1
	C80	**87-02 →**	**501327**	**Pump valve plate (SB-9515)**	**1**
	E82	87-02 →	8200194	Spring	2
GBA & NNN	B83	87-02 →	9005110-5600	Plug	1
	C05	87-02 →	8200124	Cylinder block assy, w/o speed ring	1
	C80	**87-02 →**	**501327**	**Pump valve plate (SB-9515)**	**1**
KCA	B83	87-02 →	9005110-5600	Plug	1
	C05	87-02 →	8200124	Cylinder block assy, w/o speed ring	1
	C80	**87-02 →**	**8200041**	**Pump valve plate, -2 degree**	**1**

No control screens (Item B90, Common Parts, page 6-7)

Overhaul Seal Kit

S30	**87-02 →**	**82020S30**	**Overhaul seal kit, 100 PV**	**1**
C70	87-02 →	9007276-0099	Screw	4
E40	87-02 →	9003509-0008	Nut	2
E50	87-02 →	9004104-1620	O-ring	1
E60	87-02 →	5000206	Screw **(SB-9418)**	6
F11	87-02 →	9004100-1310	O-ring	2
F12	87-02 →	8700067	Piston ring	2
F40	87-02 →	9004104-0350	O-ring	2
F50	87-02 →	9004104-0340	O-ring	2
G301	87-02 →	8200212	End cap gasket **(SB-9203)**	1
J40	87-02 → 92-29	9004104-0440	O-ring	1
J50	87-02 →	9004104-1580	O-ring	1
J90	87-02 →	9004100-0420	O-ring	1
J90	87-02 →	9004104-0440	O-ring	1
J90	87-02 →	9004100-0480	O-ring	1
K50	87-02 →	9004201-6200	O-ring **(SB-8902)**	1
L40	87-02 →	9008000-0114	Lip seal	1
L50	87-02 →	9004104-1540	O-ring	1
M11	87-02 →	8800274	Control gasket	1
M11	87-02 →	K11420	Control gasket **(SB-9302)**	1
M77	87-02 →	8800882	Manifold gasket	1
M95E	87-02 →	9004104-0120	O-ring	2
M96E	87-02 →	9004104-0140	O-ring	1
M97E	87-02 →	9004104-0240	O-ring	1
N15	87-02 →	9004201-9000	O-ring	1
P6	87-02 →	9004100-0200	O-ring	2
P13	87-02 →	9004105-0190	O-ring	2

Bold Items indicate recommended parts to be stocked for servicing

BLN-10107 Rev. B

Charge Pump Design Change

To improve efficiency and reliability, the number of parts in Series 90 pumps is being reduced. The charge pump design on 55cc thru 130cc frame sizes is being changed so that the outer port plate is an integral part of the charge pump cover and distance plates are eliminated. The change is taking effect at the following manufacturing dates:

55cc: 93-10 75cc: 93-10 100cc: 93-15 130cc: 93-34

For auxiliary pad options, the new charge pump cover is rotation dependent. The cover will be marked as either left hand (L) or right hand (R). The non-axiliary pad cover is not rotation dependent.

The charge pump shaft also changes and must be replaced when using the new style hardware. The complete charge assembly can be interchanged with corresponding hardware from 89-17 and beyond. **However, piece parts are not interchangeable.** For units prior to 89-17, consult Sauer-Sundstrand.

The old design charge pump hardware is obsolete and is no longer available. Refer to the chart on the reverse side of this page to determine the replacement kit.

BLN-10107 Rev. B

The following information must be known to determine the correct charge pump replacement kit:

1. Unit size (055, 075, 100 or 130 cc)
2. Charge pump displacement (11, 14, 17, 20, 26 or 34 cc)
3. Auxilary pad (Yes or No)
4. Rotation (LH or RH)

Obsoleted Charge Pump Parts			Unit Size	Chg. pump displace-ment	Auxilary pad	Rotation	Replacement Kit
Gear Set	Shaft	Cover					
8000169	8000174	8800513	055	11 cc	No	LH or RH	8510028
		8800514			Yes	LH	8510029
		8800514			Yes	RH	8510030
8000170	8000174	8800513	055	14 cc	No	LH or RH	8510031
		8800514			Yes	LH	8510032
		8800514			Yes	RH	8510033
8000171	8000174	8800513	055	17 cc	No	LH or RH	8510034
		8800514			Yes	LH	8510035
		8800514			Yes	RH	8510036
8100313	337956	8800513	075	14 cc	No	LH or RH	8510037
		8800514			Yes	LH	8510038
		8800514			Yes	RH	8510039
8100314	337956	8800513	075	17 cc	No	LH or RH	8510040
		8800514			Yes	LH	8510041
		8800514			Yes	RH	8510042
8100315	337956	8800513	075	20 cc	No	LH or RH	8510043
		8800514			Yes	LH	8510044
		8800514			Yes	RH	8510045
8200158	337956	8800513	100	17 cc	No	LH or RH	8510046
		8800514			Yes	LH	8510047
		8800514			Yes	RH	8510048
8200159	337956	8800513	100	20 cc	No	LH or RH	8510049
		8800514			Yes	LH	8510050
		8800514			Yes	RH	8510051
8200160	337956	8800513	100	26 cc	No	LH or RH	8510052
		8800514			Yes	LH	8510053
		8800514			Yes	RH	8510054
714444	303636	347518	130	20 cc	No	LH or RH	8510064
		347526			Yes	LH	8510065
		347526			Yes	RH	8510066
714451	303636	347518	130	26 cc	No	LH or RH	8510067
		347526			Yes	LH	8510068
		347526			Yes	RH	8510069
714469	303636	347518	130	34 cc	No	LH or RH	8510070
		347526			Yes	LH	8510071
		347526			Yes	RH	8510072

Service Bulletin SB-8809

PRODUCTS AFFECTED: Series 90 Pumps
SUBJECT: Servo Arm Change

DESCRIPTION:

As a product improvement, Sauer-Sundstrand has changed the Series 90 Pump servo arm and swashplate (items D10 and D50). The old style servo arm and swashplate will become obsolete. Because this change creates non-interchangeability between new and old swashplates, servo arms, and possibly servo pistons (item S10) and slider blocks (item F20), separate servo arms and swashplates will no longer be sold as spare parts.

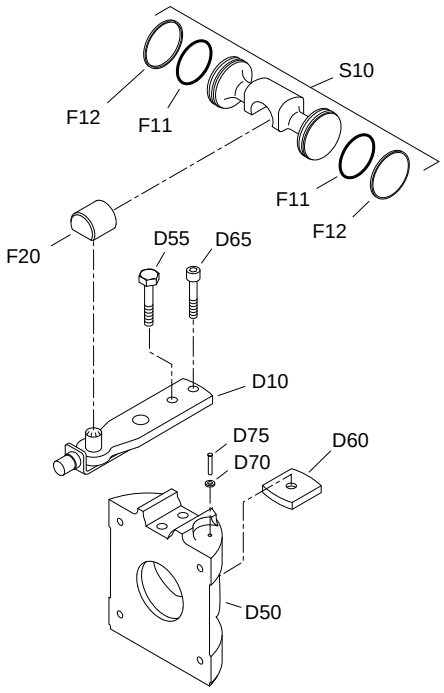
Also, the new servo arm is actually a press fit into a groove in the new swashplate. This situation requires special tooling for assembly, therefore, pre-assembled kits will be created for 55, 75, and 100 cc pumps. The kits will work in any vintage pump.

The kit for 55 cc pumps will include all the items in the figure, except item S10.

The kit for 75 cc pumps will include all the items in the figure.

The kit for 100 cc pumps will include all the items in the figure, except items S10 and F20.

NOTE: The slider block (item F20) in 55 cc pumps and the slider block and the servo piston (item S10) in 75 cc pumps had to be changed slightly to allow clearance for the new servo arm. The new part number servo piston and slider blocks will work in any vintage pump.



Service Bulletin SB-8809

MODELS AFFECTED:

All 94-2XXX (55 cc Pumps), 95-2XXX (75 cc Pumps), and 96-2XXX (100 cc Pumps)

SERIAL NUMBERS AFFECTED:

Change goes into effect with S/N 88-14-XXXXX on 55 cc Pumps and with S/N 88-16-XXXXX for 75 cc and 100 cc Pumps.

PART NUMBERS AFFECTED:

New 55 cc Slider Block is P/N 8000189.
New 75 cc Slider Block is P/N 8100368.
New 100 cc Slider Block is P/N 8100369.
New 55 cc Servo Arm / Swashplate Kit is P/N 8000201.
New 75 cc Servo Arm / Swashplate Kit is P/N 8100377.
New 100 cc Servo Arm / Swashplate Kit is P/N 8200192.

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☒ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-8816

PRODUCTS AFFECTED: Series 90 Pumps
SUBJECT: Change in Fixed Slipper Hold Down

DESCRIPTION:

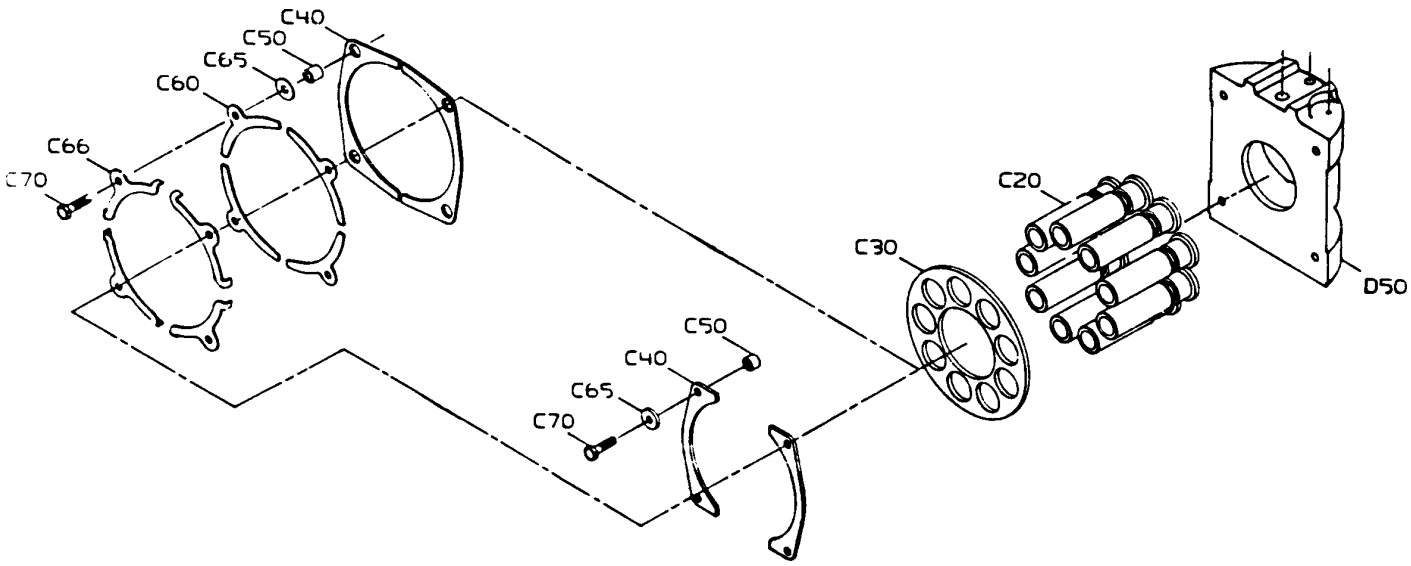
As a product improvement, Sauer-Sundstrand has simplified the design of the Series 90 Pump slipper hold-down mechanism. The hold-down changes from spring loaded with a fixed maximum clearance to a fixed clearance design.

The leaf spring (item C60) and spring aligner (item C66) will be eliminated and will not be available as spare parts.

The spacer (item C50), bearing (item C40), and washer (item C65) will change and the old part numbers will not be available as spare parts.

The swashplate (item D50), pistons (item C20), slipper retainer (item C30), and screws (item C70) will remain the same.

If any of the affected parts (items C66, C60, C65, C50, or C40) require replacement during repair of older style pumps, discard these parts and rebuild using new style parts (items C40, C50, and C65). As before, the screws (item C70) which are coated with locking compound MUST always be replaced after removal.



New Style
Slipper Hold-Down

Service Bulletin SB-8816

MODELS AFFECTED:

All 94-2xxx (55 cc Pumps), 95-2xxx (75 cc Pumps), and 96-2xxx (100 cc Pumps)

SERIAL NUMBERS AFFECTED:

55 cc Pumps, 94-2xxx, Changed at S/N 88-43-xxxxx
75 cc Pumps, 95-2xxx, Changed at S/N 88-22-xxxxx
100 cc Pumps, 96-2xxx, Changed at S/N 88-20-xxxxx

PART NUMBERS AFFECTED:

Part numbers for the obsoleted parts can be found in the Series 90 Service Parts Manual, BLN-2-41528/9. New style part numbers are as follows:

		Part Numbers		
Item	**Qty / Pump**	**55 cc**	**75 cc**	**100 cc**
C40	2	8000137	8100294	8200144
C50	4	8000138	8100295	8200145
C65	4	9009625-0159	9009625-0159	9009625-0159
C70	4	9007276-0114	9007276-0099	9007276-0099

PARTS DISPOSITION:

- ☐ Not Applicable
- ☐ Interchangeable
- ☒ Non-Interchangeable - as individual parts, but new style C40, C50 and C65 can be used in any vintage pump if all three (3) parts are used.
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-8823

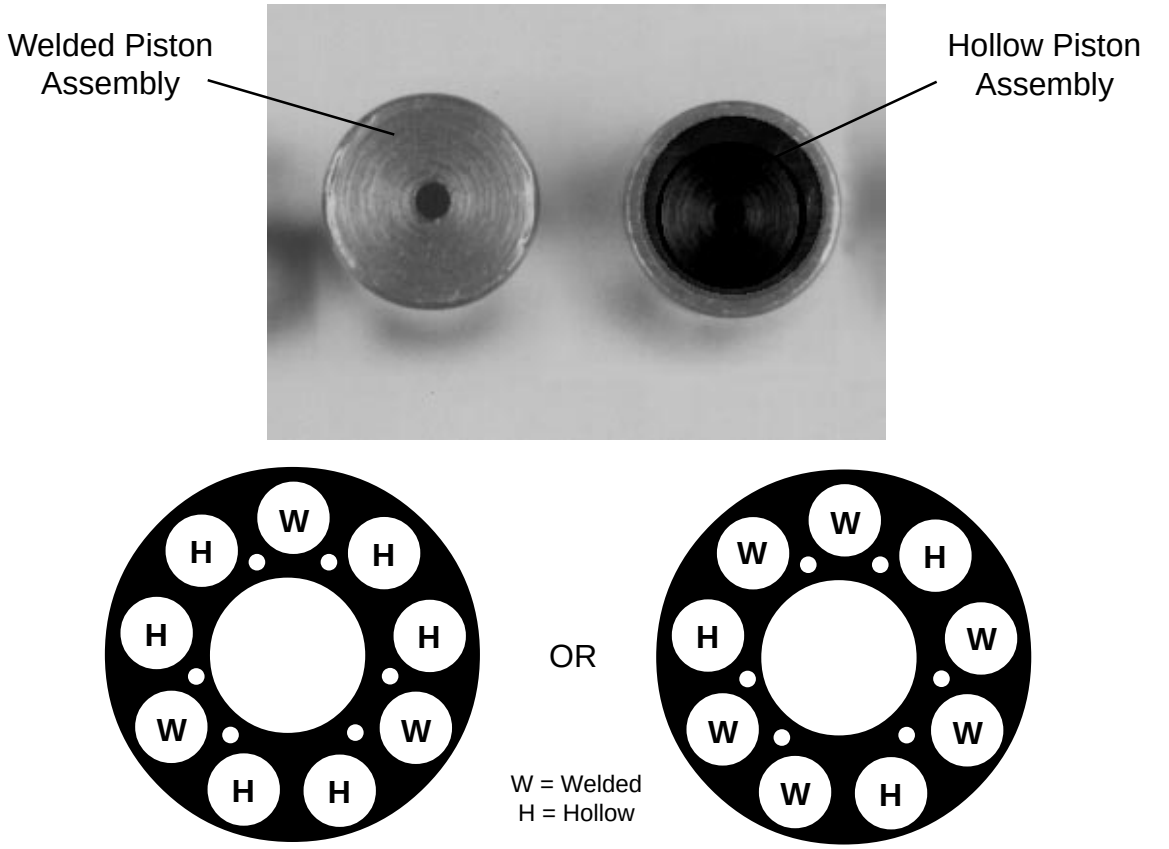
PRODUCTS AFFECTED: Series 90 Pumps and Motors
SUBJECT: Piston Improvement

DESCRIPTION:

Product Information Bulletin PIB-8801 (March, 1988) announced the incorporation of fabricated (welded) piston assemblies, replacing non-fabricated (hollow) piston assemblies, in the cylinder blocks of all Series 90 pumps and motors. This change increases the overall efficiency of the Series 90 product line.

To simplify service parts inventory for all Series 90 units, only individual welded piston assemblies will be available as service parts. The hollow pistons will be obsoleted. Part numbers for INDIVIDUAL welded piston assembies are listed on the back side of this bulletin.

Since all Series 90 pumps and motors have nine (9) pistons, welded pistons being used to replace hollow pistons during repair MUST be installed in the cylinder block symmetrically, in multiples of three (3).



When replacing hollow pistons with welded pistons, it is mandatory that the welded pistons be incorporated symmetrically in multiples of three (3).

Service Bulletin SB-8823

MODELS AFFECTED:

All Series 90 Pumps and Motors
- 93-XXXX
- 94-XXXX
- 95-XXXX
- 96-XXXX

SERIAL NUMBERS AFFECTED:

Welded pistons will be incorporated into all Series 90 pumps and motors by the end of the first quarter of 1989.

PART NUMBERS AFFECTED:

PART NUMBER	DESCRIPTION
706101	Piston Assembly, Welded-42 cc
367672	Piston Assembly, Welded-55 cc
708230	Piston Assembly, Welded-75 cc
364000	Piston Assembly, Welded-100 cc

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable (in groups of 3)
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-8824 Rev. A

PRODUCTS AFFECTED: Series 90 Pumps
SUBJECT: Remote Pressure Filtration Adapter Change

DESCRIPTION:

NOTICE

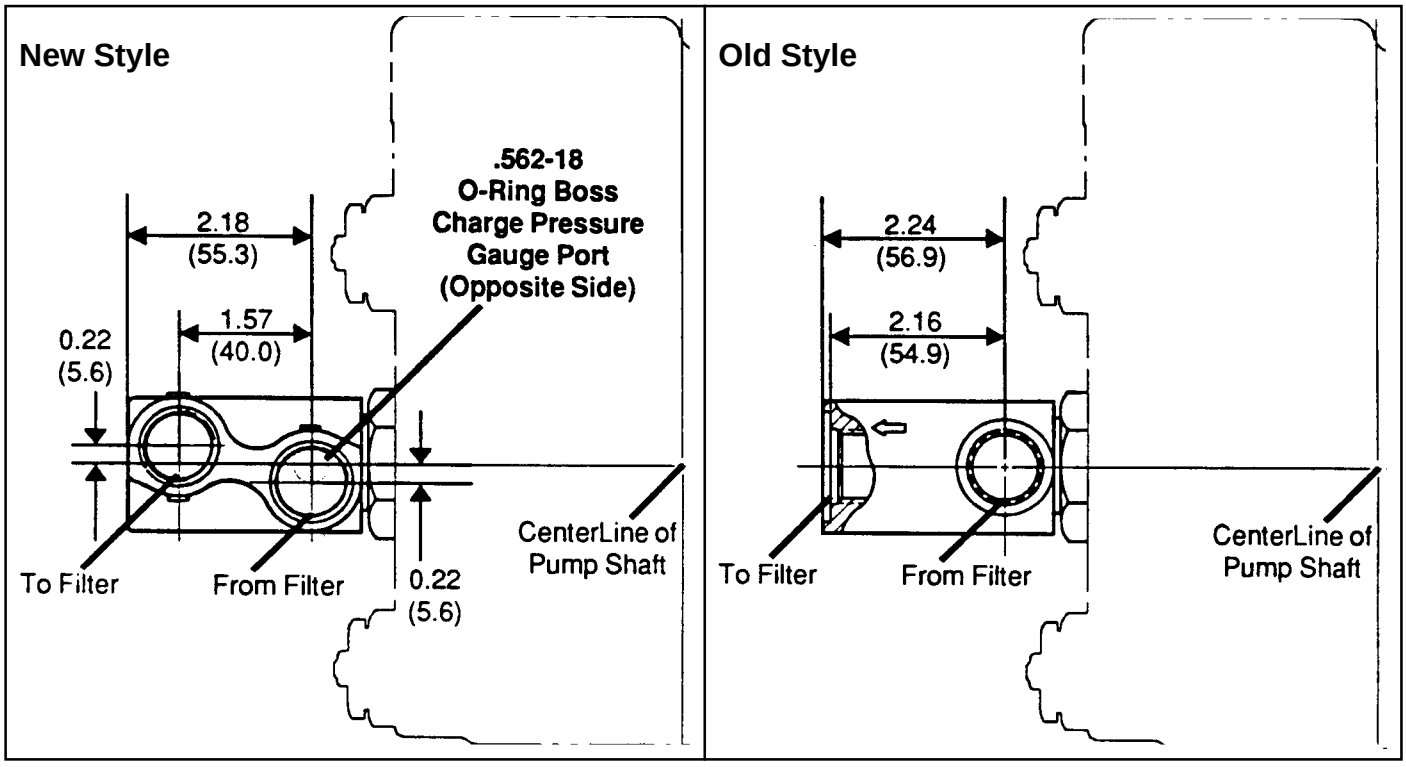
The initial issue of this bulletin (dated 12/19/88) did not include an incorporation date. This revision is being distributed to inform all users of the exact incorporation date. You may remove the initial issue of this bulletin from your files.

DESCRIPTION

The configuration of the Remote Pressure Filtration Adapter, available as an option on Sauer-Sundstrand Series 90 Variable Pumps (55, 75, and 100 cc) is changing. This improved design adapter incorporates a charge pressure test port. In addition, the remote filter connections have been relocated to improve the customer interface and the routing for filter plumbing on most applications. Port sizes did **not** change. (A version of the improved design adapter is already being used on Series 90 42 cc Variable Pumps.)

This change does not affect the pump end cap, and either design filtration adapter can be used on any vintage pump. Only the new style adapter will be available as spare parts or on new production pumps.

The outline dimensional differences between the new and old adapters are shown below.



Service Bulletin SB-8824 Rev. A

MODELS AFFECTED:

All Series 90 pumps (93-2xxx, 94-2xxx, 95-2xxx, 96-2xxx) with Remote Pressure Filtration (Option R).

SERIAL NUMBERS AFFECTED:

Remote pressure filtration equipped pumps shipped after April 24, 1989, or with serial number X-89-17-xxxxx and up will include the new design adapter.

PART NUMBERS AFFECTED:

Part Number	Description
8002N00R-A	Filtration Remote - Kit ("New Style")

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable (changes to machine plumbing will probably be necessary)
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☐ All ASCs
- ☐ Non-Restricted Distribution

Service Bulletin SB-8902

PRODUCTS AFFECTED: Series 90 Pumps
SUBJECT: Incorporation of Adjustable Charge Relief Valve

DESCRIPTION:

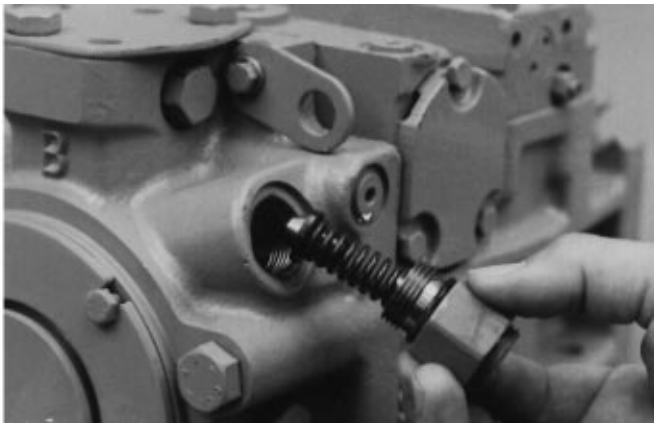
As a product improvement, Sauer-Sundstrand is incorporating an externally adjustable charge relief valve on all Series 90 variable displacement pumps. This design replaces the previous shim adjustable charge relief valve. The new design valve provides a range of pressure adjustment which covers the available charge pressure options of 290, 348, and 406 psi (20, 24, and 28 bar).

NOTE This improvement changes the design of the charge relief valve poppet and plug. The new style charge relief valve may protrude from the pump end cap approximately 0.27 in. (6.9 mm) farther than the shim adjustable design.

To adjust the new design valve, first install gauges to measure charge pressure and case pressure as described in the Series 90 Service Manual. Loosen the adjustment lock nut with a 1-1/16 in. hex wrench. Operate the pump at an input speed of 1700 to 2000 rpm and turn the adjustment nut with a large screwdriver while observing the charge pressure and case pressure. Clockwise (CW) rotation of the plug increases the setting, while counterclockwise (CCW) rotation decreases the setting (at a rate of approximately 50 psi [3.4 bar] per turn). Charge pressure settings are referenced to case pressure. Once the desired setting is achieved, torque the lock nut to 34 to 41 lbsf•ft (46 to 55 Nm) and remove the gauges.

Sauer-Sundstrand will offer an adjustable charge relief valve kit for sale as a spare part. This kit can be used to service any vintage Series 90 variable pump. Since the new and old style charge relief valves are interchangeable as an assembly, the old style parts will be made obsolete and will no longer be available as spare parts.

Adjusting Charge Relief Valve



Charge Relief Valve Assembly

Service Bulletin SB-8902

MODELS AFFECTED:

All Series 90 Pumps (93-2xxx, 94-2xxx, 95-2xxx, and 96-2xxx)

SERIAL NUMBERS AFFECTED:

Due to the interchangeability of the charge relief valve assemblies, this is a running change. It will be incorporated into all Series 90 variable pumps by March of 1989.

PART NUMBERS AFFECTED:

Part Number	Description
8002K000-A	Adjustable Charge Relief Valve Kit - "New Style" (Includes poppet, spring, plug, O-ring, and lock nut)

PARTS DISPOSITION:

- ☐ Not Applicable
- ☐ Interchangeable
- ☒ Non-Interchangeable (as an assembly)
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☐ Non-Restricted Distribution

Service Bulletin SB-8903

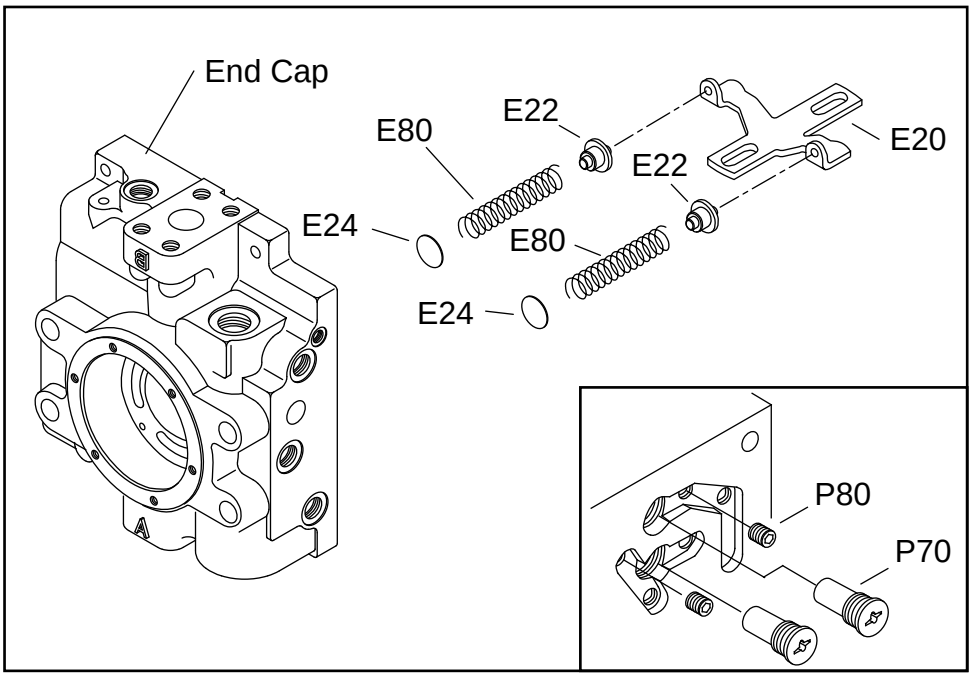
PRODUCTS AFFECTED: Series 90 Pumps
SUBJECT: Swashplate Leveler Spring Seat Change
and Servo Pressure Relief Valves

DESCRIPTION:
As a product improvement, Sauer-Sundstrand is adding hardened shims between the swashplate leveler springs and the end cap in Series 90 variable displacement pumps. In addition, the leveler spring seats have been hardened, and are now separate pieces from the leveler. Previously, the seats were peened to the leveler.

These improvements requier some minor changes in the repair procedures for the Series 90 pumps. When installing the leveler springs (item E80), take care that the spring seats (item E22) are in position on the swashplate leveler. Before installing the end cap, assemble the hardened shims (item E24) into their poskets in the end cap and retain with petroleum jelly.

The swashplate leveler, plus the separate spring seats, is directly interchangeable with the old design part. When performing major repairs on any Series 90 pump, the hardened shims should be installed between the leveler springs and the end cap.

In an unrelated change, the servo pressure check (relief) valves (item P70) installed in the pump end cap (or rotation valve housing) were replaced by standard internal hex, straight thread O-ring plugs in some pumps. The servo pressure check (relief) valves MUST be installed in pumps equipped with pressure limiters in order to provide maximum end cap gasket life.



Service Bulletin SB-8903

MODELS AFFECTED:

All 93-2xxx (42 cc Pumps), 94-2xxx (55 cc Pumps), 95-2xxx (75 cc Pumps), and 96-2xxx (100 cc Pumps)

SERIAL NUMBERS AFFECTED:

The hardened swashplate leveler spring seats and hardened shims between the leveler springs and end cap will be incorporated into Series 90 pumps at Serial Number 89-09-xxxxx.

PART NUMBERS AFFECTED:

			Part Numbers			
Item	Desc.	Qty /Pump	42 cc	55 cc	75 cc	100 cc
E20	Leveler	1	673897	8000094	8100130	8200007
E22	Spring Seat	2	358820	358838	358523	358846
E24	Shim	2	359034	359042	359042	359059

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☐ Non-Restricted Distribution

Service Bulletin SB-8906

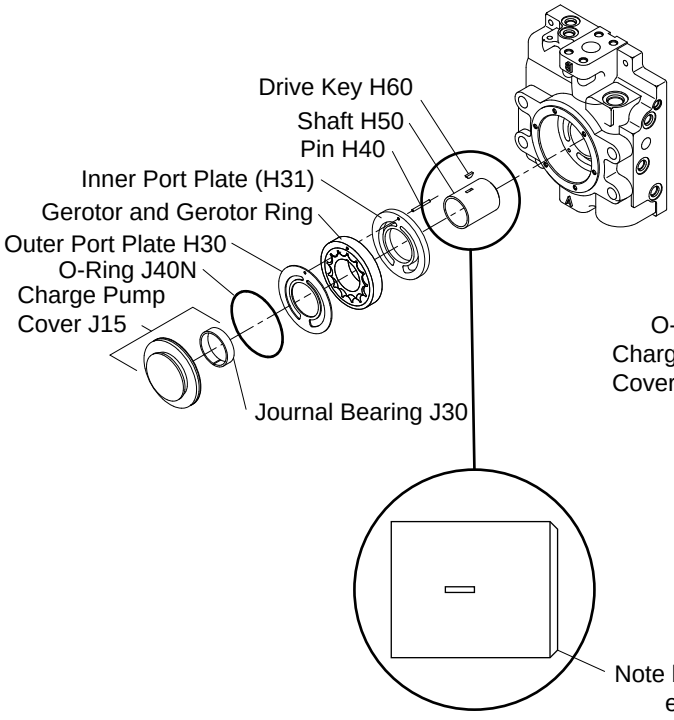
PRODUCTS AFFECTED: Series 90 Pumps
SUBJECT: Charge Pump Design Changes

DESCRIPTION:

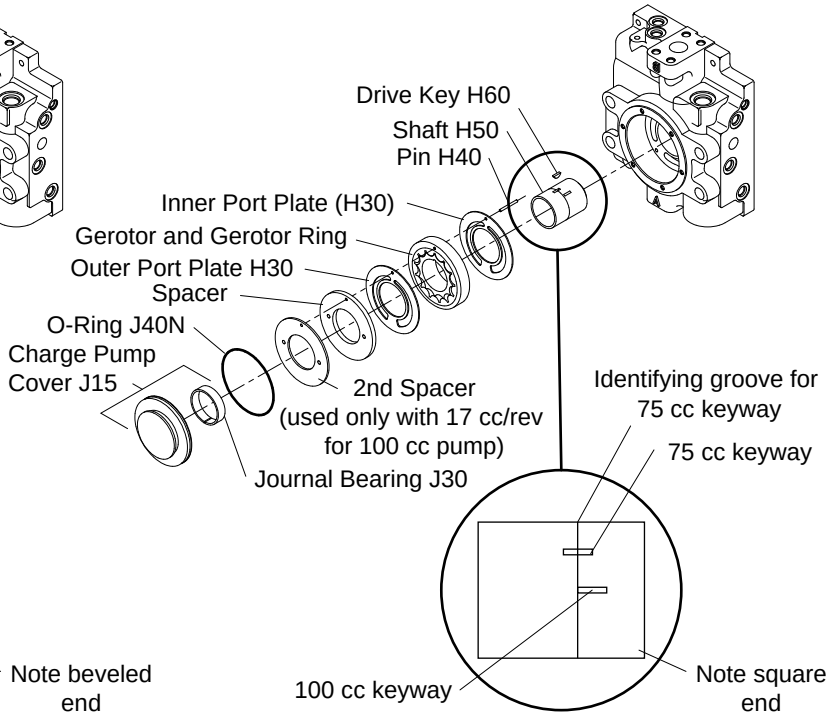
The original design Series 90 charge pump assembly included two (2) port plates, one (1) on each side of the gerotor. If the charge pump displacement was less than the maximum available for the pump's frame size, the inside port plate was thicker than the 0.050 in. (1.27 mm) outside port plate.

The new design charge pump will always have two (2) 0.050 in. (1.27 mm) thickness port plates, one (1) on each side of the gerotor. Additionally, if the charge pump displacement is less than the maximum available for the pump's frame size, one (1) or two (2) spacers will be installed between the outside port plate and the charge pump cover.

In addition, the location of the keyway in the charge pump shaft has also been changed to ensure full engagement of the drive key in the gerotor. The new charge pump shaft used in 75 cc and 100 cc frame size pumps has two (2) keyways. The rear keyway (farthest from the end cap and splined end of the shaft) is used for 75 cc pumps, while the front keyway (closest to the end cap and splined end of the shaft) is used for 100 cc pumps. The new style charge pump shafts for 55, 75, and 100 cc pumps also changed from having a beveled end to a square end on the end of the shaft closest to the pump end cap.



Old charge pump shaft



New charge pump shaft for 75 cc and 100 cc pumps

Service Bulletin SB-8906

MODELS AFFECTED:

All 94-2xxx (55 cc Pumps), 95-2xxx (75 cc Pumps), and 96-2xxx (100 cc Pumps)

SERIAL NUMBERS AFFECTED:

The new charge pump design will be incorporated into Series 90 pumps at the following Serial Numbers:

A-89-17-xxxxx for all pumps manufactured in Ames, Iowa, U.S.A.

N-89-07-xxxxx for all 95-2xxx (75 cc) pumps manufactured in Neumünster, Germany.

N-88-48-xxxxx for all 96-2xxx (100 cc) pumps manufactured in Neumünster, Germany.

PART NUMBERS AFFECTED:

Proper part number versus pump serial number information can be found in the May, 1989, issue of the Series 90 Service Parts Manual, BLN-2-41528/9.

The thicker inside port plates (thicker than 0.050 in. [1.27 mm]) will be obsoleted, and will NOT be available as spare parts. If these parts require replacement, use the 0.050 in. (1.27 mm) port plate and appropriate spacer(s) as spares. On 100 cc pumps only, the new charge pump shaft MUST be used if the new style spacer is used.

On 55 and 75 cc pumps, the charge pump shaft clearance pocket in the end cap changed from a beveled to a straight (90°) corner to correspond with the change in the charge pump shaft. Old style charge pump shafts will remain available as spare parts and MUST be used in the 55 cc and 75 cc beveled pocket end caps.

Old style (beveled pocket) end caps will be obsoleted and will NOT be available as spare parts. If an old style end cap needs replacement, new style end caps can be used with any vintage charge pump hardware and charge pump shaft.

PARTS DISPOSITION:

- ☐ Not Applicable
- ☐ Interchangeable
- ☒ Non-Interchangeable (Must use correct charge pump shaft per Serial Number of pump)
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☐ Non-Restricted Distribution

Service Bulletin SB-8923 Rev. A

PRODUCTS AFFECTED: Series 90 100cc Variable Pumps
SUBJECT: Reduction in Overall Length

DESCRIPTION:

This Bulletin was issued in September, 1989 for advanced information. The purpose of this revision 'A' is for exact serial number incorportation only.

To improve application flexibility, the overall length of Series 90 100cc pumps will be reduced by .39" (10mm). Some port locations will also change.

Shown below are all dimensional differences between the current and new design pumps.

Service Bulletin SB-8923 Rev. A

MODELS AFFECTED: All 96-2xxx pumps

SERIAL NUMBERS AFFECTED:

This change will take place in late November, 1989 with s/n A-89-46-xxxxx.

PART NUMBERS AFFECTED:

Non-interchangeability will exist with drive shafts, which become shorter with this change, end caps, end cap gaskets, and the end cap to the variable housing retaining screws. Old style end caps will no longer be available as spare parts. In the rare event that a new end cap is required, a new shaft, end cap gasket, and screws will also be needed. Part number for current parts can be found in the Series 90 Service Parts Manual (BLN-2-41528/9, May 1989). The new part numbers are as follows:

Item*	Part Number	Description	Qty.
G046	8200175	End cap - Axial	1
G306	8200166	Gasket	1
G906	9007210-0608	Screw	1
G956	9007210-0608	Screw	1
J80A	9007314-1623	Screw	4
J80B	9007314-1623	Screw	4
J80C	9007314-1623	Screw	4
J80N	9007210-1621	Screw	4
L1C7	8200169	Shaft -23 t.	1
L1F1	8200170	Shaft - 13 t.	1
L1S1	8200171	Shaft - 14 t.	1
L1TF	8200179	Shaft - Tapered spline	1
L1T2	8200173	Shaft - Tapered	1
L1K3	8200176	Shaft - Straight Key	1

* From the Series 90 Service Parts Manual, BLN-2-41528/9

PARTS DISPOSITION:

- ☐ Not Applicable
- ☐ Interchangeable
- ☒ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☐ Non-Restricted Distribution

Service Bulletin SB-9203 Rev. A

PRODUCTS AFFECTED: Series 90: 55,75,100, 130 cc Pumps
SUBJECT: Block Point Change: Components Redesign

DESCRIPTION:

As part of our overall Series 90 product improvement program, numerous components are being redesigned. This redesign is referred to as a “blockpoint” change. The objective of the blockpoint change is to minimize the number of times we change the units while we convert to high volume tooling at various plant sites. These design improvements will provide increased reliability and more application flexibility. The nature of these changes makes customer requalification unnecessary. Old style (pre-block point) variable housings and endcaps will no longer be available as spare parts.

FRAME SIZE: 100

Parts Affected:

Item	Description	Pre "blockpoint" Part Number	New Part Number (92-12 & Later)
Common Parts Group, 100 cc			
B10	Variable Housing	8200117✧	726554
E10	Side cover	8200011	746560
F20	Slider block	8200016*✧	8200225*
G93	Spacer	end cap grp	8800564
G94	Bracket Lifting	end cap grp	8800565
G95	Washer	n/a	9009610-3459
B82	Plug	n/a	9005110-5600
End Cap Group, 100 cc			
G048	End cap-twin ports	8200157✧	8200235
G93	Spacer	8800404	common part
G94	Lifting bracket	8800401	common part
G308	End cap gasket	8200166*✧	8200212*
G908	Screw	9007314-0608	9007314-0810**
G958	Screw	9007314-0608	9007314-0810**
G968	Screw	9007314-0607	9007314-0808**
G046	End cap-Side ports	8200175✧	8200236
G306	End cap gasket	8200166*✧	8200212*
G906	Screw	9007314-0608	9007314-0810**
G956	Screw	9007314-0608	9007314-0810**
G968	Screw	9007314-0607	9007314-0808**
G172	Plug	n/a	9005110-4400
G182	Plug	n/a	9005110-4400
Special Hardware Features Group, 100 cc			
B83	Plug-Speed Pick-up	n/a	9005110-5600

* Interchangeable part.
✧ Obsolete

Service Bulletin SB-9203 Rev. A

MODELS AFFECTED:

All Series 90 94-2xxx, 95-2xxx, 96-2xxx, and 97-2xxx Variable Pumps.

SERIAL NUMBERS AFFECTED:

Changes will take place at the following Serial Numbers:

55 cc	92-06 & beyond
75 cc	92-18 & beyond
100 cc	92-12 & beyond
130 cc	92-19 & beyond

PART NUMBERS AFFECTED:

Refer to text of this bulletin for specific part numbers.

Housing:	(all frame sizes)Thickness adjacent to the side cover has been increased.
Side Cover:	(100 cc & 130cc only) Thickness increased.
End Cap:	(all frame sizes) Match housing change; small end cap screws (55 cc-100 cc) will be larger; the orientation of the charge relief valve on side port end caps has been changed from an oblique to a vertical orientation.
Controls:	(130cc only) Eliminate mounting plate, three-pin link change.
Side Cover:	(130cc only) Swashplate hold-down ("T-bar") mounting will be changed to commonize the design with the smaller displacement units.

NOTE: Reference PIB-9102 for design changes and outline dimensions.

PARTS DISPOSITION:

- ☐ Not Applicable
- ☐ Interchangeable
- ☒ Non-Interchangeable except where noted
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

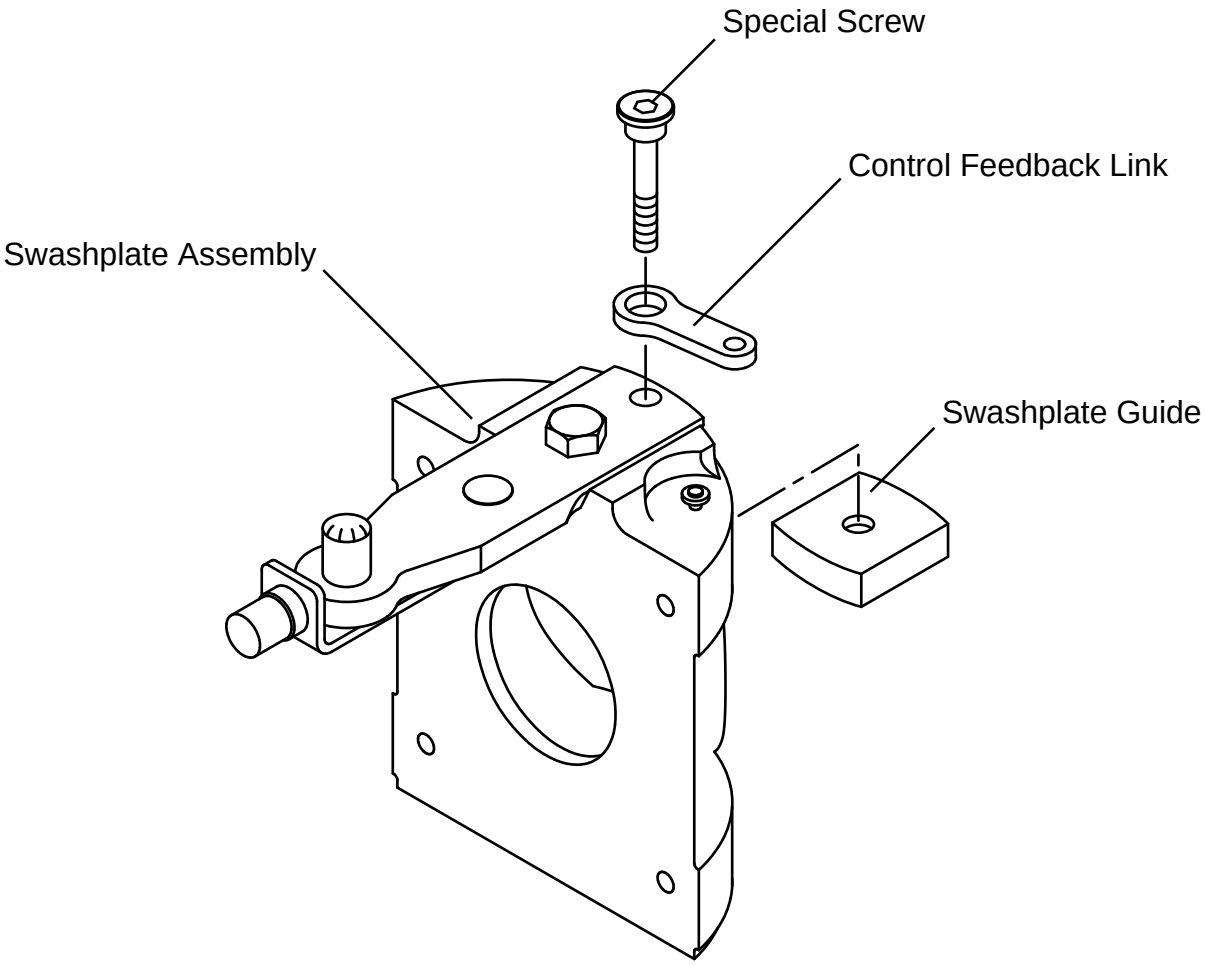
Service Bulletin SB-9211

PRODUCTS AFFECTED: Series 90: 55, 75 and 100 cc Pumps

SUBJECT: Feedback Link Retention

DESCRIPTION:

Effective in September of 1992, the feedback link in Series 90 pumps will be mechanically retained to the swashplate. In the past, the link slipped over a specially ground socket head screw and could fall off the screw during pump assembly. The screw has changed to include a head to retain the link. The feedback link does not change.



Service Bulletin SB-9211

MODELS AFFECTED:

All 94-2xxx (55cc), 95-2xxx (75cc), and 96-2xxx (100cc) pumps.

SERIAL NUMBERS AFFECTED:

Pumps with S/N A-92-38-xxxxx and beyond include the new feature.

PART NUMBERS AFFECTED:

	Old Screw	New "Headed" Screw
55 & 75cc 100cc	9007276-0109 9007375-0030	9007375-0044 9007375-0032

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9301 Rev. A

PRODUCTS AFFECTED: Series 90 Pumps - 55cc thru 100cc

SUBJECT: Charge Pump Design Change

DESCRIPTION:

The serial numbers mentioned on the reverse side of this page apply only to Ames production units. Neumunster will incorporate the change in July or August of this year. A service bulletin will follow when the exact dates are known.

To improve efficiency and reliability, the number of parts in Series 90 charge pumps is being reduced. The charge pump design on 55cc thru 100cc frame sizes is being changed such that the outer port plate (H30) is an integral part of the charge pump cover (J15) and distance plates are eliminated.

For auxiliary pad options, the new charge pump cover is rotation dependent. The cover will be marked either left hand (L) or right hand (R). The non-auxiliary pad cover is not rotation dependent.

The charge pump shaft also changes and must be replaced when using the new style hardware. The complete charge pump assembly can be interchanged with corresponding hardware from
89-17 and beyond. **However, piece parts are not interchangeable**. For units prior to 89-17, consult Sauer-Sundstrand.

Service Bulletin SB-9301 Rev. A

MODELS AFFECTED:

All 94-2xxx, 95-2xxx, and 96-2xxx Pumps

SERIAL NUMBERS AFFECTED:

55cc: A-93-10 & beyond
75cc: A-93-10 & beyond
100cc: A-93-15 & beyond

PART NUMBERS AFFECTED:

See Attached Table

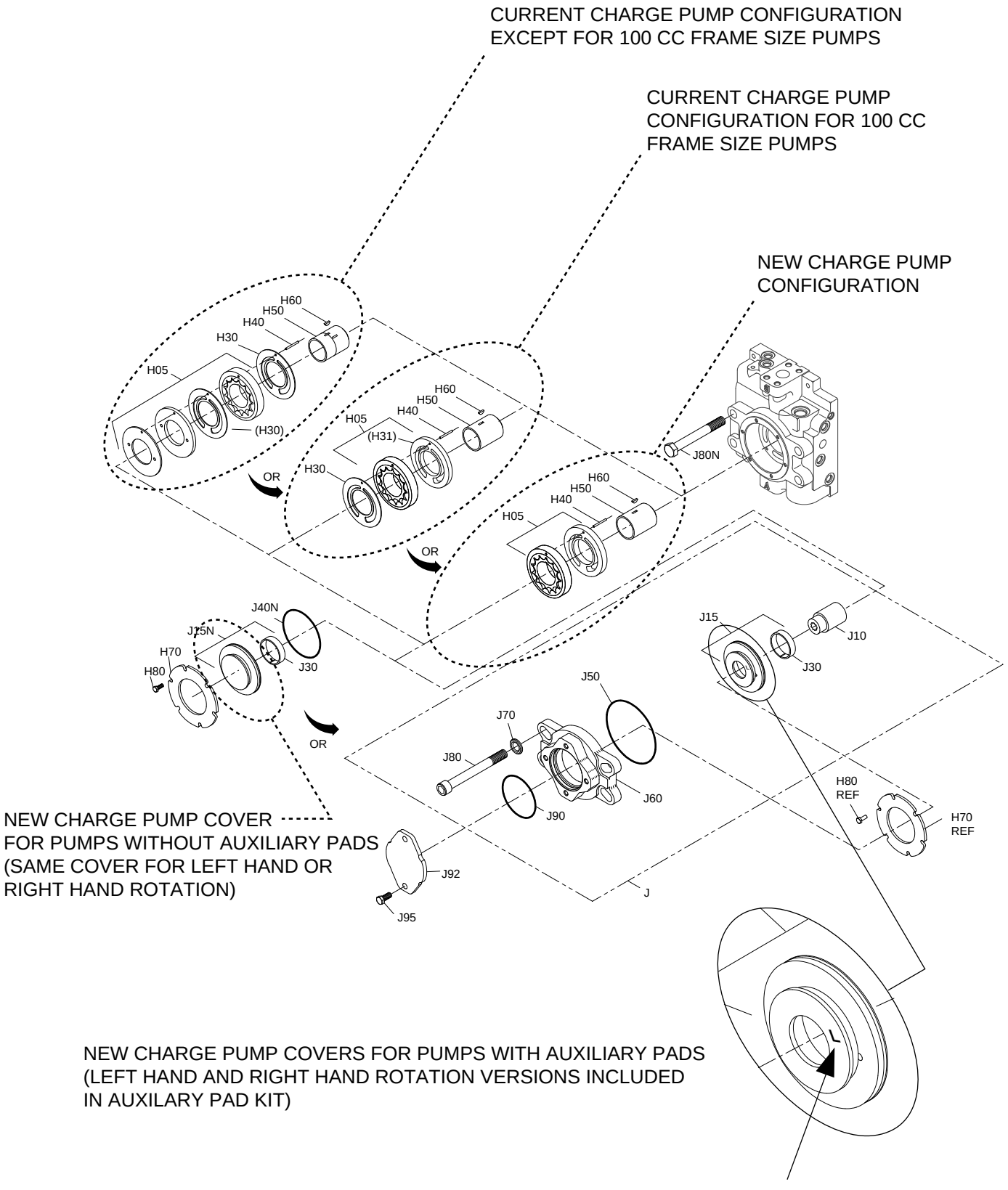
PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable → Interchangeable for S/N's 89-17 and beyond. Piece parts are not interchangeable.
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9301 Rev. A



Series 90 - 55cc thru 100 cc Charge Pump Configuration

55cc		75cc		100cc			
Before 93-10	After 93-10	Before 93-10	After 93-10	Before 93-10	After 93-10	Item Number	Description
8000169	8000268	N/A	N/A	N/A	N/A	H05B	11 cc Charge Pump Set
8000170	8000269	8100313	8100479	N/A	N/A	H05C	14 cc Charge Pump Set
8000171	8000270	8100314	8100480	8200158	8200238	H05D	17 cc Charge Pump Set
N/A	N/A	8100315	8100481	8200159	8200239	H05E	20 cc Charge Pump Set
N/A	N/A	N/A	N/A	8200160	8200240	H05F	26 cc Charge Pump Set
8800314	N/A	8800314	N/A	8800314	N/A	H30	Port Plate
N/A	Incl in H05	N/A	Incl in H05	8800315-	Incl in H05	H31	Port Plate - 100cc
8000174	8000267	337956	8100476	337956	8100476	H50	Charge Pump Shaft
8800513	8800834	8800513	8800834	8800513	8800834	J15N	Cover Assy - Charge Pump
8800514	See J15 L/R	8800514	See J15 L/R	8800514	See J15 L/R	J15	"Aux" Charge Pump Cover
N/A	8800833	N/A	8800833	N/A	8800833	J15L	"Aux" L.H. Cover Assy
N/A	8800832	N/A	8800832	N/A	8800832	J15R	"Aux" R.H. Cover Assy

NOTE: PIECE PARTS ARE NOT INTERCHANGEABLE!

Service Bulletin SB-9203 Rev. A

PRODUCTS AFFECTED: Series 90: 55,75,100, 130 cc Pumps
SUBJECT: Block Point Change: Components Redesign

DESCRIPTION:

As part of our overall Series 90 product improvement program, numerous components are being redesigned. This redesign is referred to as a “blockpoint” change. The objective of the blockpoint change is to minimize the number of times we change the units while we convert to high volume tooling at various plant sites. These design improvements will provide increased reliability and more application flexibility. The nature of these changes makes customer requalification unnecessary. Old style (pre-block point) variable housings and end caps will no longer be available as spare parts.

FRAME SIZE: 075

Item	Description	Pre "blockpoint" Part Number	New Part Number (92-19 & Later)
Common Parts Group, 75 cc			
B10	Variable Housing	716621✧	724674
B82	Plug	n/a	9005110-5600
G93	Spacer	end cap grp	8800564
G94	Bracket Lifting	end cap grp	8800565
G95	Washer	end cap grp	9009610-3459
G048	End cap-Twin ports	8100292✧	8100471
G308	Gasket	8100270*✧	8100466*
G958	Screw	9007314-0604	9007314-0804**
G93	Spacer	8800404	common part
G94	Lifting bracket	8800522	common part
G95	Washer	9009610-2850	common part
G046	End cap-Side ports	8100356✧	8100472
G306	Gasket	8100212*✧	8100448*
G906	Screw	9007210-0611	9007210-0810**
G956	Screw	9007314-0608	9007314-0810**
G17	Plug	n/a	9005110-4400
G18	Plug	n/a	9005110-4400
B83	Plug-Speed Pick-up	n/a	9005110-5600

* Interchangeable part.
✧ Obsolete

Service Bulletin SB-9203 Rev. A

MODELS AFFECTED:

All Series 90 94-2xxx, 95-2xxx, 96-2xxx, and 97-2xxx Variable Pumps.

SERIAL NUMBERS AFFECTED:

Changes will take place at the following Serial Numbers:

55 cc	92-06 & beyond
75 cc	92-19 & beyond
100 cc	92-12 & beyond
130 cc	92-19 & beyond

PART NUMBERS AFFECTED:

Refer to text of this bulletin for specific part numbers.

Housing:	(all frame sizes)Thickness adjacent to the side cover has been increased.
Side Cover:	(100 cc & 130cc only) Thickness increased.
End Cap:	(all frame sizes) Match housing change; small end cap screws (55 cc-100 cc) will be larger; the orientation of the charge relief valve on side port end caps has been changed from an oblique to a vertical orientation.
Controls:	(130cc only) Eliminate mounting plate, three-pin link change.
Side Cover:	(130cc only) Swashplate hold-down ("T-bar") mounting will be changed to commonize the design with the smaller displacement units.

NOTE: Reference PIB-9102 for design changes and outline dimensions.

PARTS DISPOSITION:

- ☐ Not Applicable
- ☐ Interchangeable
- ☒ Non-Interchangeable except where noted
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

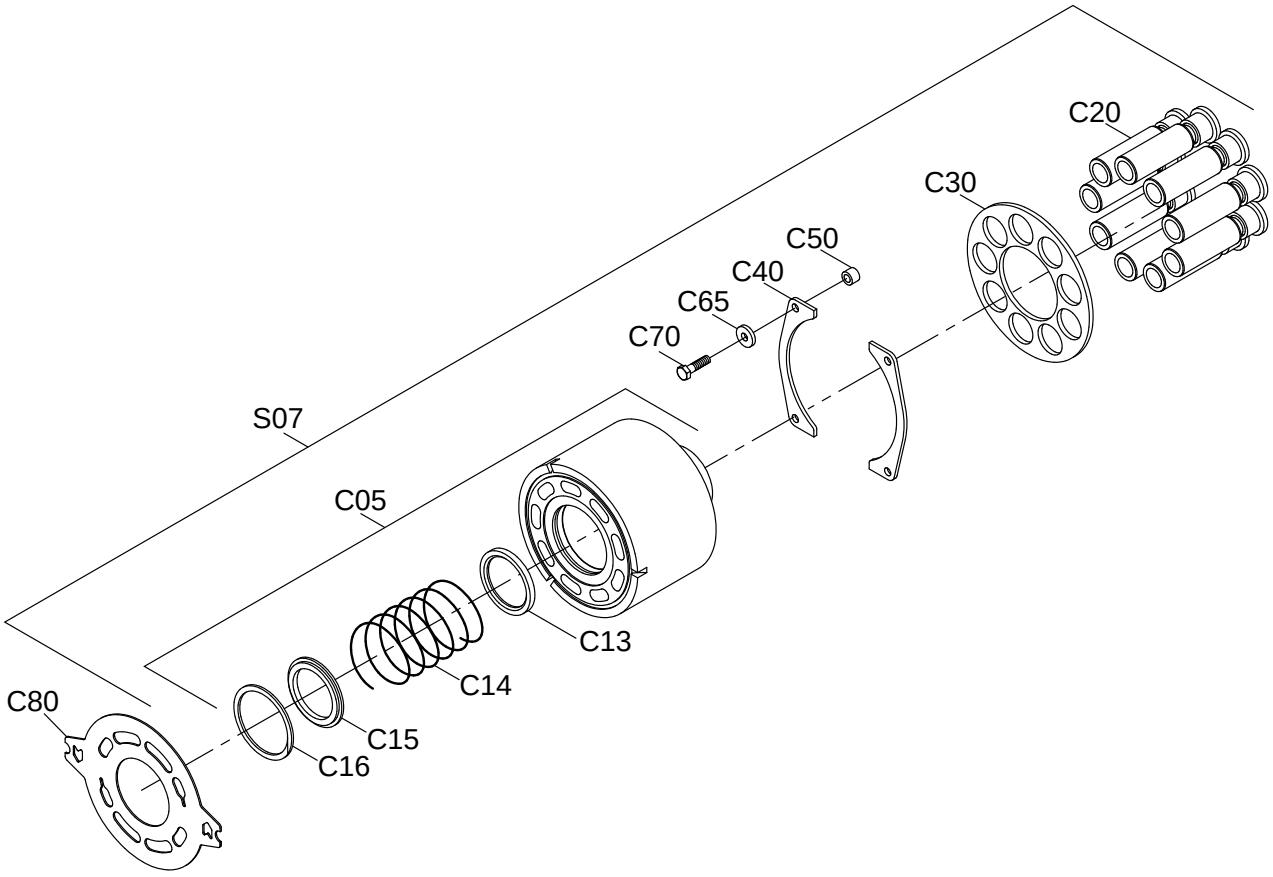
Service Bulletin SB-9312

PRODUCTS AFFECTED: All Series 90 Pumps

SUBJECT: Removal of Valve Plate from Cylinder Block Kit

DESCRIPTION:

Due to the increasing number of valve plate options, the valve plate (item C80) will be no longer included in the cylinder block kit (item S07) on all Series 90 variable pumps. Valve plates must be ordered separately for service parts. See special hardware features group in your Service Parts Manual for appropriate valve plate number.



Service Bulletin SB-9312

MODELS AFFECTED:

All 93-2xxx, 94-2xxx, 95-2xxx, 96-2xx, and 97-2xxx pumps.

SERIAL NUMBERS AFFECTED:

Not Applicable

PART NUMBERS AFFECTED:

Frame Size	Cylinder Block Kit
42 cc	80520S07
55 cc	80020S07
75 cc	81020S07
100 cc	82020S07
130 cc	83020S07

PARTS DISPOSITION:

- ☒ Not Applicable
- ☐ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☐ All Product Related Sauer-Sundstrand Distributors
- ☐ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9315 Rev. A

PRODUCTS AFFECTED: 90 Series Variable Pumps 042, 055, 075 and 100 cc

SUBJECT: Servo Arm Interference with Speed Sensor Ring

DESCRIPTION:

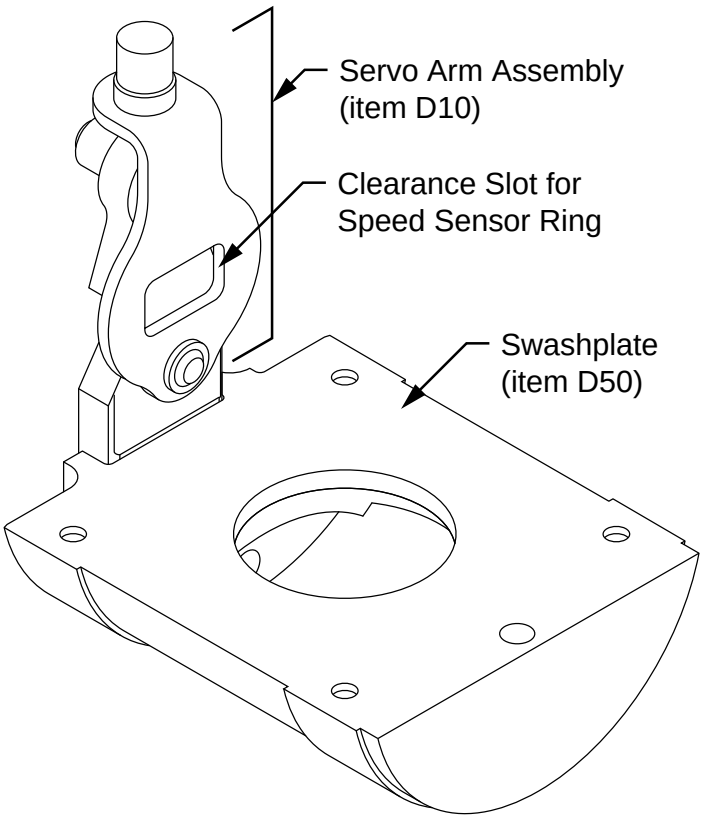
NOTE: This Service Bulletin revision adds the 042 cc Frame Size and the incorporation date of the 055 through 100 cc.

A potential interference problem has been identified in Series 90 042, 055, 075, and 100 frame size pumps built since early 1992. Interference may occur between the swashplate hold down bracket on the servo arm and the speed sensor ring, which may be installed on the cylinder block as an option.

A new hold down bracket has been designed to provide clearance for the speed sensor ring.

If a cylinder block with speed sensor ring must be installed in one of the subject pumps, a servo arm assembly with the new style hold down will also be required.

Sometime during the first quarter of 1994, all 055, 075 and 100 cc pumps will be equipped with the new design hold down bracket. The 042 cc pumps will implement the new design hold down bracket in the second quarter of 1994. A revision to this bulletin will be issued when exact incorporation date is known.



Service Bulletin SB-9315 Rev. A

MODELS AFFECTED:

All 93-2xxx, 94-2xxx, 95-2xxx, 96-2xx, and 97-2xxx pumps.

SERIAL NUMBERS AFFECTED:

042 cc → S/N's beginning with 92-16 and later
055 cc → S/N's beginning with 92-06 and later
075 cc → S/N's beginning with 92-17 and later
100 cc → S/N's beginning with 92-12 and later

All 55, 75, 100 cc units built in Ames beginning with S/N A-94-11 and later will have the new servo arm assembly installed. The 100 cc units from Neumunster will also incorporate on this date. The 75 cc units built in Neumunster will incorporate on 94-14. The 42 cc does not have an incorporation date as of yet.

PART NUMBERS AFFECTED:

Frame Size	Old Servo Arm (no slot in bracket)	New Servo Arm (with slotted bracket)
042 cc	354282	502976
055 cc	8000191	8000318
075 cc	8100366	8100499
100 cc	8200182	8200268

PARTS DISPOSITION:

- ☐ Not Applicable
- ☐ Interchangeable
- ☒ Non-Interchangeable - Pumps with a speed ring must use the new servo arm.
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9413 Rev. A

PRODUCTS AFFECTED: Series 90 and Series 51 Units with Pulse Pickup (Speed Sensing)

SUBJECT: Pulse Pick-up Change

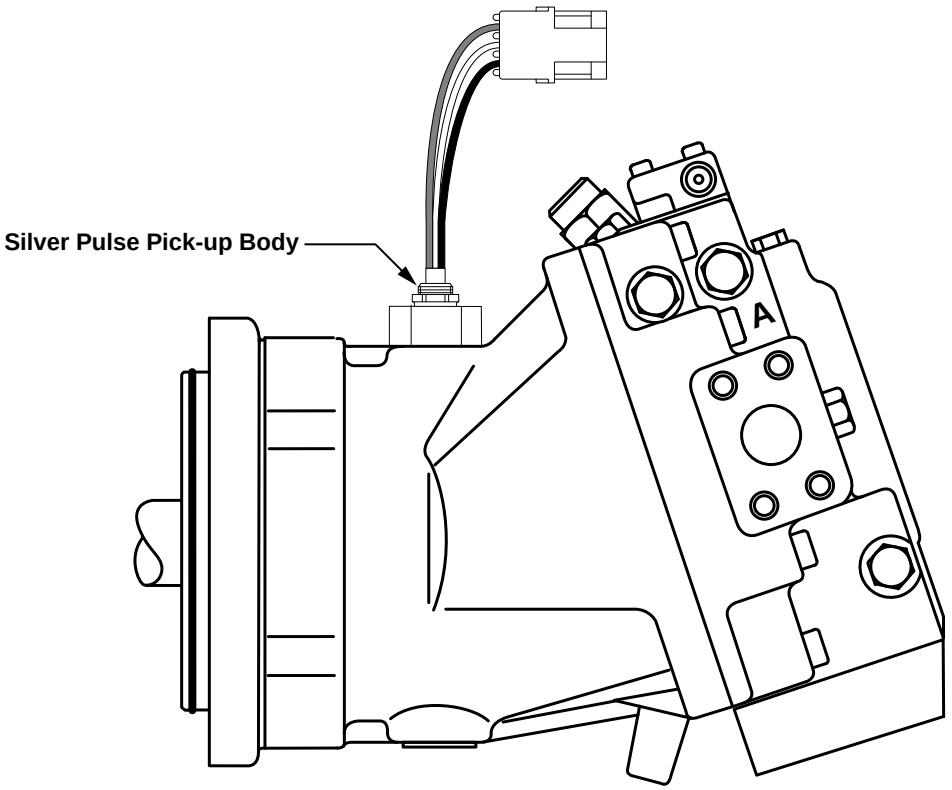
DESCRIPTION:

A small number of pulse pick-ups used on pumps and motors between June 1992 and April 1994 have been found to be defective due to corrosion of internal circuitry.

The corrosion of the internal circuitry may cause intermittent operation or partial loss of signal and eventual failure.

A typical installation of a pulse pick-up is pictured below. Note the "silver" color of the potentially defective pulse pick-up body. This should be replaced with a pulse pick-up body that is "black" in color.

NOTE: If your speed sensor is in an electrical closed loop feedback circuit, possibly used with a microprocessor, the silver colored speed sensor must be changed regardless of the special hardware features code.



Service Bulletin SB-9413 Rev. A

MODELS AFFECTED:

All pumps and motors that used the pulse pick-up option, which is indicated by the special hardware features order code.

Options: 51 Series = ACA, NNT, AAA, NNU, ABA
90 Series = EAA, EAB, EAD, NNS, EBB, ECA

90L055 EA 1 N
6 S 3 C6 C 03
EAA 35 35 24

51V160 RFIN
F1A1 ANE1 **ACA**
050AA21 0322

SERIAL NUMBERS AFFECTED:

A-92-22-xxxxx thru A-94-17-xxxxx

PART NUMBERS AFFECTED:

Sensor	Connector Style	Body Color
KPPA124	Weather Pack	Silver
KPPB124	Weather Pack	Silver
KPPA125	Metri Pac	Silver
KPPB125	Metri Pac	Silver
KPPC124	Weather Pac	Black
KPPC125	Metri Pac	Black

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9417

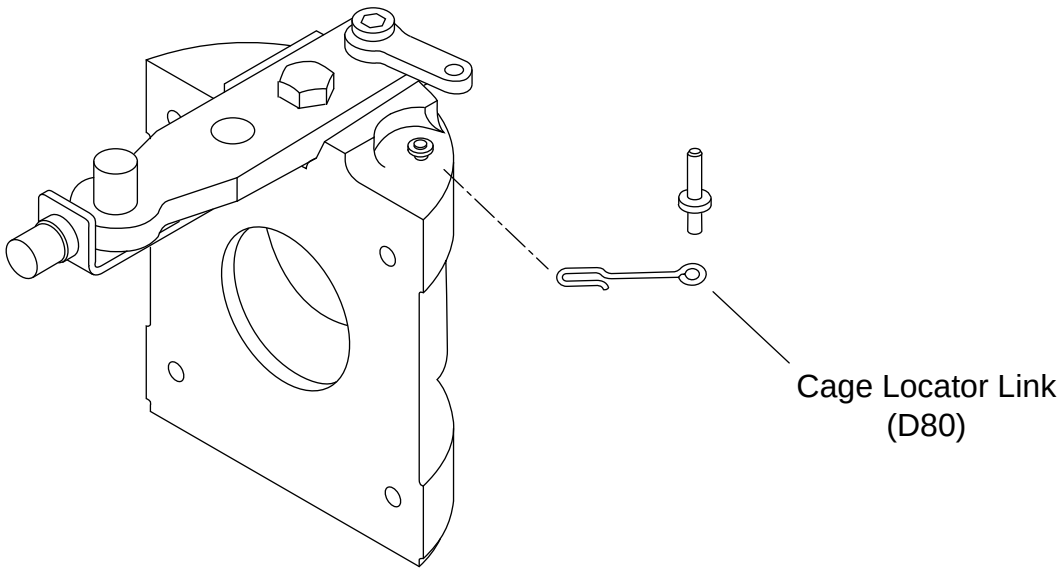
PRODUCTS AFFECTED: Series 90, 55 - 100 cc Variable Pumps

SUBJECT: Swashplate Cage Locator

DESCRIPTION:

As a product improvement, Sauer-Sundstrand has made a design change to the cage locator link (item no. D80) used on the 55 cc through 100 cc variable pumps.

The new link is made from square wire. In the past, the link was made from round wire. This is an interchangeable change.



Service Bulletin SB-9417

MODELS AFFECTED:

All 94-2xxx + 942xxx, 95-2xxx + 952xxx, and 96-2xxx + 962xxx pumps

SERIAL NUMBERS AFFECTED:

55 - 75 cc → 94-18 and beyond
100 cc → Beginning 4th Quarter 1994

PART NUMBERS AFFECTED:

	Old Link	New Link
55 & 75 cc	8100241	8100506
100 cc	8200108	8200273

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9418

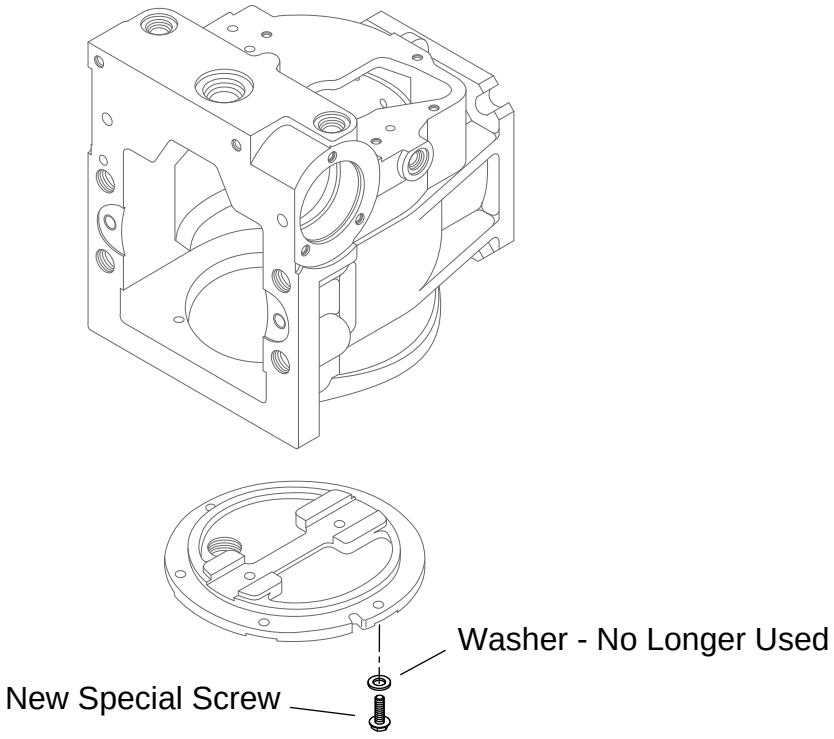
PRODUCTS AFFECTED: Series 90 Variable Pumps
SUBJECT: Side Cover Washer Elimination

DESCRIPTION:

The washers located under the side cover screws have been removed on all Series 90 42 thru 130 cc variable pumps.

As before, the side cover screws must be replaced if they are removed for any reason. The special coating, which seals and retains the screws, wears off when the screws are removed.

The screw length changed on 55 thru 100 cc pumps, so it is important that the washers are discarded during repair. The proper screw is included in the overhaul seal kits.



Service Bulletin SB-9418

MODELS AFFECTED:

All Series 90 42 thru 130 cc variable pumps

SERIAL NUMBERS AFFECTED:

Change took place during the 2nd and 3rd quarter of 1994

PART NUMBERS AFFECTED:

Pump Size	Old Screw	New Screw
42 cc	648477	Same Part Number
55-100 cc	9007276-0115	5000206
130 cc	308700	Same Part Number

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
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DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☐ Non-Restricted Distribution

Service Bulletin SB-9435

PRODUCTS AFFECTED: Series 90 100 cc Variable Pumps
SUBJECT: Elimination of Housing/End Cap Screw

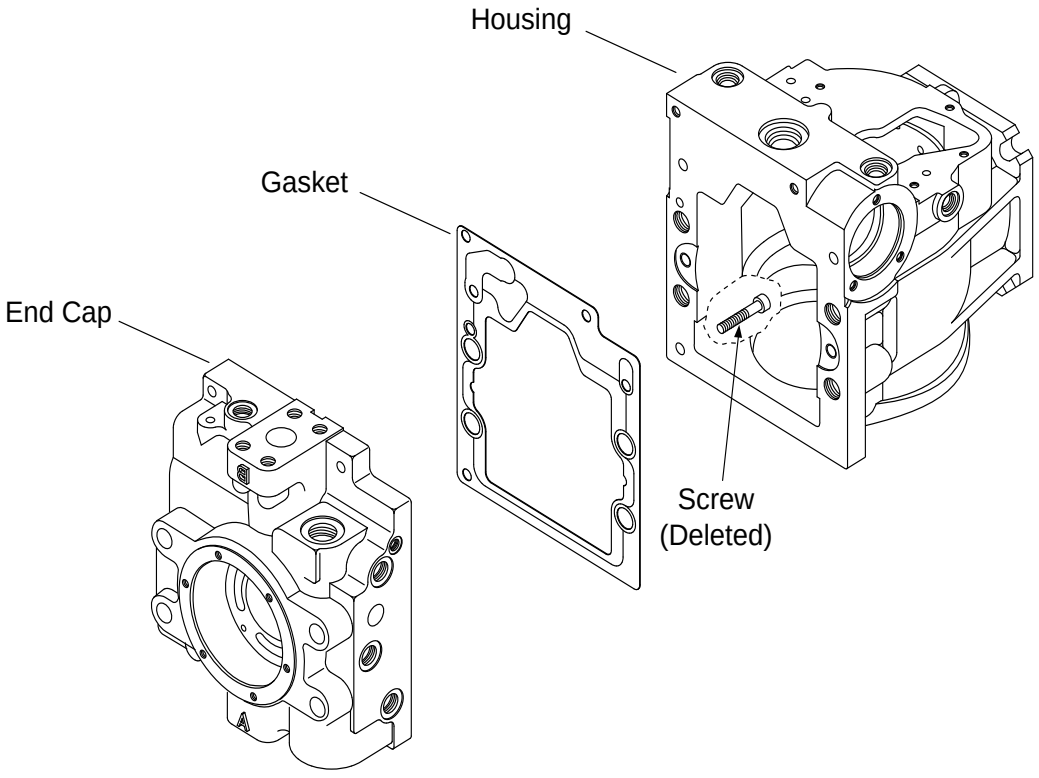
DESCRIPTION:

As a product improvement, Sauer-Sundstrand reinforced the 100 cc pump housing, eliminating the need for the screw shown below.

The hole was not removed from the end cap gasket so it can be used with any housing/end cap combination.

The hole was removed from the end cap, but the part number did not change. The new end cap can be used with either housing.

The old housing was obsoleted and no longer available as a service part.



Service Bulletin SB-9435

MODELS AFFECTED:

All Series 90 100 cc Variable Pumps

SERIAL NUMBERS AFFECTED:

Change occurred at serial number 95-07-xxxxx

PART NUMBERS AFFECTED:

Description	Part Number (prior to 95-07)	Part Number (95-07 & beyond)
Housing	726554	8200305
Screw	9007314-0808	No longer required

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☐ Non-Restricted Distribution

Service Bulletin SB-9436

PRODUCTS AFFECTED: Series 90 55 thru 130 cc Variable Pumps

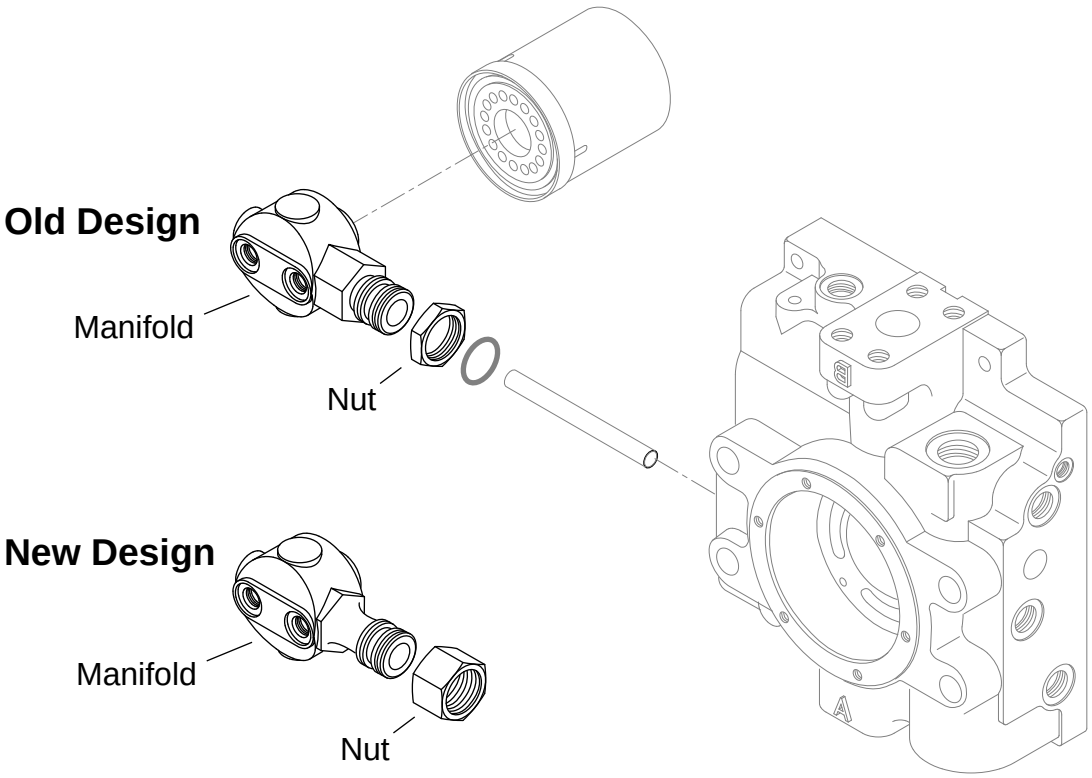
SUBJECT: Integral Filtration Manifold

DESCRIPTION:

As a product improvement, Sauer-Sundstrand is changing the integral filter manifold and bulkhead nut to make it more easily indexed.

The old bulkhead nut may be used with either the old or new filter manifold. The new bulkhead nut can only be used with the new filter manifold.

The old bulkhead nut will remain available as a service part. The old filter manifold will be obsoleted and no longer available as a service part.



Service Bulletin SB-9436

MODELS AFFECTED:

All Series 90 55 thru 130 cc Variable Pumps with 'L', 'M', or 'P' filtration option code

SERIAL NUMBERS AFFECTED:

Change occurred at serial number 95-18-xxxxx

PART NUMBERS AFFECTED:

Description	Part Number (prior to 95-18)	Part Number (95-18 & beyond)
Filter Manifold	8800200	8800896
Bulkhead Nut	9002863-1600	5000222

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable - new bulkhead nut can only be used with new filter manifold
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9436

PRODUCTS AFFECTED: Series 90 55 thru 130 cc Variable Pumps

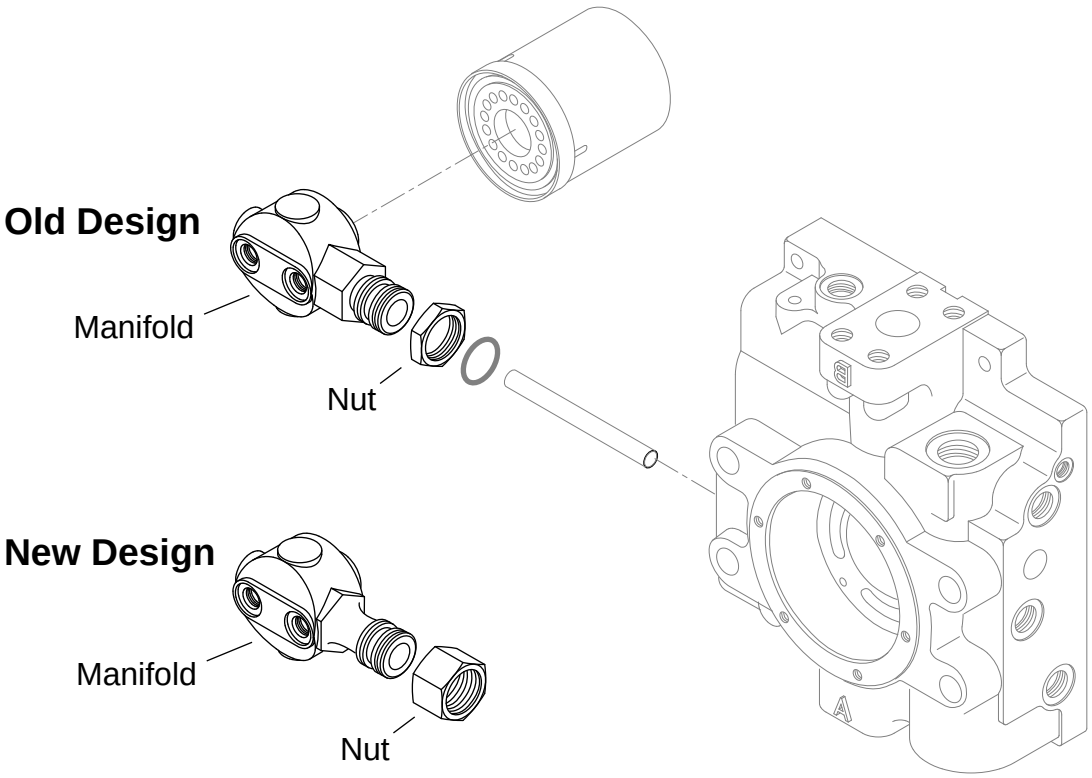
SUBJECT: Integral Filtration Manifold

DESCRIPTION:

As a product improvement, Sauer-Sundstrand is changing the integral filter manifold and bulkhead nut to make it more easily indexed.

The old bulkhead nut may be used with either the old or new filter manifold. The new bulkhead nut can only be used with the new filter manifold.

The old bulkhead nut will remain available as a service part. The old filter manifold will be obsoleted and no longer available as a service part.



Service Bulletin SB-9436

MODELS AFFECTED:

All Series 90 55 thru 130 cc Variable Pumps with 'L', 'M', or 'P' filtration option code

SERIAL NUMBERS AFFECTED:

Change occurred at serial number 95-18-xxxxx

PART NUMBERS AFFECTED:

Description	Part Number (prior to 95-18)	Part Number (95-18 & beyond)
Filter Manifold	8800200	8800896
Bulkhead Nut	9002863-1600	5000222

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable - new bulkhead nut can only be used with new filter manifold
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
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- ☒ Non-Restricted Distribution

Service Bulletin SB-9503

PRODUCTS AFFECTED: Series 90 Pumps - All Frame Sizes

SUBJECT: Manual Displacement Control (MDC)
with DC Electric Solenoid Override

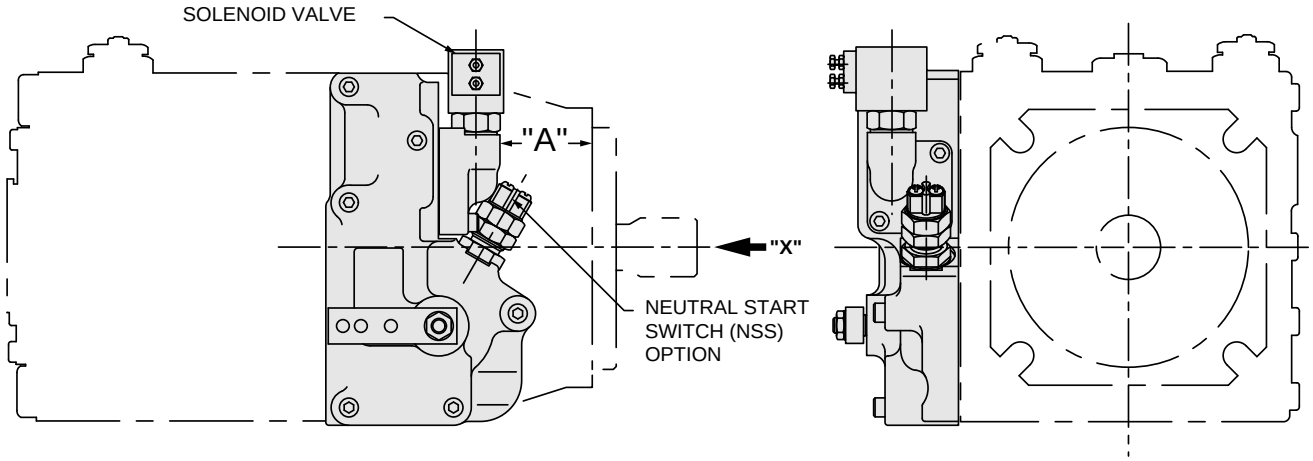
DESCRIPTION:

In order to accomodate our European customers, the manifold which attaches to the front of the manual displacement control (MDC) housing is being changed.

The European solenoid valve requires a thicker manifold to provide clearance between the solenoid and the front of the MDC housing. The revised manifold will protrude closer to the mounting flange of the pump, reducing dimension "A" shown in the accompanying drawing by approximately 5 mm [0.2 in]. Please see chart below for specific clearances.

The thicker manifold requires longer screws and may be used with either the U.S. or European sourced solenoid.

This change will become effective during March of 1995. The old manifold will be obsoleted and no longer available as a service part.



SERIES 90
MANUAL DISPLACEMENT CONTROL
WITH DC SOLENOID OVERRIDE

Frame Size		042	055	075	100	130
Dimension "A"	Current	39.9 [1.57]	55.9 [2.20]	54.1 [2.13]	60.2 [2.37]	74.4 [2.93]
mm [in]	Future	34.9 [1.37]	50.9 [2.0]	49.1 [1.93]	55.2 [2.17]	69.4 [2.73]

Service Bulletin SB-9503

MODELS AFFECTED:

All Series 90 Variable Pumps using manual displacement control (MDC) with DC electric solenoid override.

SERIAL NUMBERS AFFECTED:

Change will take place in March '95

PART NUMBERS AFFECTED:

	Current Part Number	New Part Number	Quantity
Manifold	8800365	505022	1
Screw	9007314-0605	9007314-0606	2

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable (new manifold requires longer screws)
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9510

PRODUCTS AFFECTED: Series 90 Variable Pumps

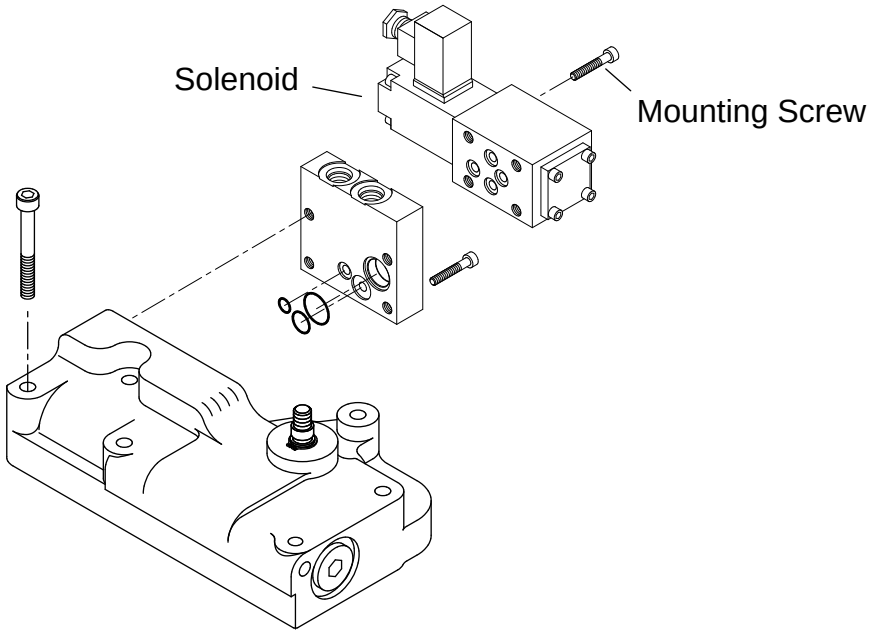
SUBJECT: Solenoid Valve Change

DESCRIPTION:

Sauer-Sundstrand has changed suppliers of the solenoid valve for the manual displacement control with 12 volt two position solenoid valve (order codes ME and MJ).

The new solenoid valve requires shorter mounting screws.

The old solenoid valve is being obsoleted and no longer available as a service part. A kit has been created that includes the new solenoid valve and the appropriate mounting screws.



Service Bulletin SB-9510

MODELS AFFECTED:

All Series 90 variable pumps using control order codes ME and MJ

SERIAL NUMBERS AFFECTED:

Units built N-95-24-xxxxx and after

PART NUMBERS AFFECTED:

Old Solenoid	Old Screws	Replacement Kit
504381	9007315-0510	8510107

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable ☞ Piece parts are not interchangeable.
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9514

PRODUCTS AFFECTED: Series 20 & 90 Pumps With Optional Neutral Start Switch

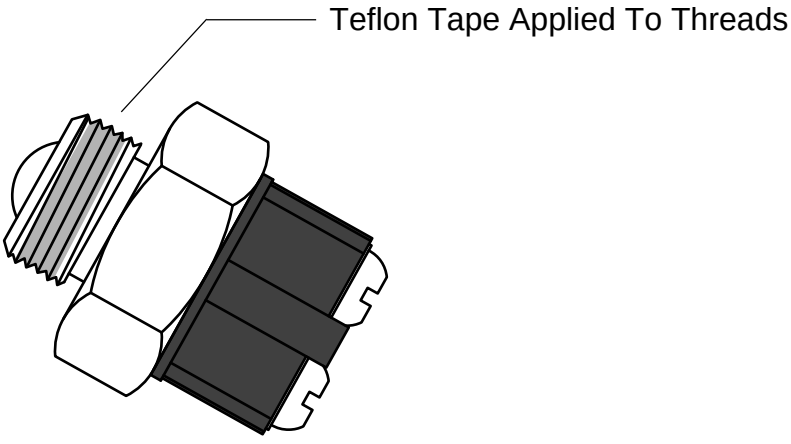
SUBJECT: Neutral Start Switch Change

DESCRIPTION:

Sauer-Sundstrand has changed suppliers of the neutral start switch on Series 20 and some neutral start switch options (MR, MS and ML) on Series 90 pumps. Advanced notification of this change was given with Product Information Bulletin number PIB-9403.

The new switch has Teflon tape on the threads instead of Vibra-Seal. New Teflon tape should be applied to the threads if the switch is removed for any reason.

Due to interchangeability, the old switch has been obsoleted and no longer available as a service part.



Service Bulletin SB-9514

MODELS AFFECTED:

All Series 20 variable pumps and Series 90 variable pumps using control order codes ML, MR and MS

SERIAL NUMBERS AFFECTED:

Units built N-95-17-xxxxx and after

PART NUMBERS AFFECTED:

Old Switch	New Switch	NSS Kit
9700922	503545	8510027*

* The Neutral Start Switch Kit part number did not change

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9515

PRODUCTS AFFECTED: Series 90 75 & 100 Pumps

SUBJECT: Valve plate part number change

DESCRIPTION:

Sauer-Sundstrand has changed the sourcing of valve plates on 75 and 100 cc variable displacement pumps.

The new valve plate is interchangeable with the old valve plate. The old valve plate will be obsoleted and no longer available as a service part. Due to interchangeability, any old valve plates in inventory may be used or reidentified as the new part number.

Service Bulletin SB-9515

MODELS AFFECTED:

All Series 90 75 cc variable pumps using EBC, FAC and GBA 'Special Hardware' order code.

All Series 90 100 cc variable pumps using EDB, FAC, FAD,GBA and GBG 'Special Hardware' order code.

SERIAL NUMBERS AFFECTED:

Not Applicable

PART NUMBERS AFFECTED:

Order Code	75 cc		100 cc	
	old number	new number	old number	new number
EBC	758409	501332	-	-
EDB	-	-	758417	501327
FAC	737460	501333	737478	501328
FAD	-	-	758417	501327
GBA	758409	501332	758417	501327
GBG	-	-	758417	501327

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☒ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☒ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

Service Bulletin SB-9525

PRODUCTS AFFECTED: Series 90, 55, 75, & 100 cc Variable Pumps

SUBJECT: Side Cover Design Change

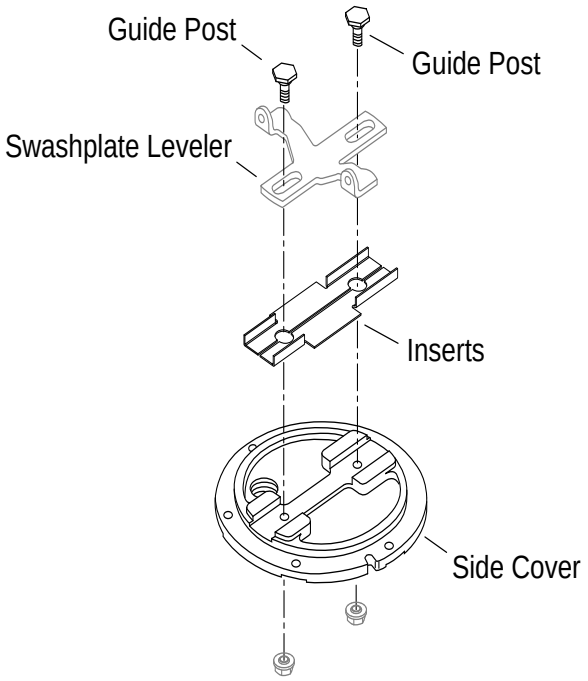
DESCRIPTION:

As a product improvement, Sauer-Sundstrand is changing the side cover and swashplate leveler ("T-Bar") guide post design.

The new design side cover will have two hardened inserts in the machined slot which serves as a guide for the swashplate leveler, and modified guide posts. The swashplate leveler does not change.

Old guide posts will remain available for service requirements of pumps with the old design side cover.

The old style side cover will be obsoleted and no longer available as a service part. A service kit has been created for replacing the old design side cover. The kit includes the new side cover, guide posts and inserts. **Piece parts are not interchangeable.**



Service Bulletin SB-9525

MODELS AFFECTED:

All 55, 75 & 100 cc variable pumps

SERIAL NUMBERS AFFECTED:

This change became effective at serial number N-95-50-xxxxx

PART NUMBERS AFFECTED:

	Old Part Numbers		New Part Numbers		
Description	Guide Post	Side Cover	Insert assy.	Guide Post	Side Cover Kit
55 cc	8100353	8000157	8000406	8000379	8510097
75 cc	8100353	8100226	8100562	8000379	8510098
100 cc	8100353	746560	506914	8000379	8510099*

PARTS DISPOSITION:

- ☐ Not Applicable
- ☒ Interchangeable
- ☐ Non-Interchangeable
- ☐ Use Parts in Stock
- ☐ Scrap Used Parts
- ☐ Return New Parts for Credit
- ☐ Order Replacement Parts
- ☐ Rework Parts in Stock
- ☐ Revise Existing Part Orders
- ☐ Scrap New Parts and Supply for Credit

Piece parts are <u>not</u> interchangeable

DISTRIBUTION:

- ☒ All Product Related Sauer-Sundstrand Distributors
- ☒ All Product Related OEM's
- ☒ All ASCs
- ☒ Non-Restricted Distribution

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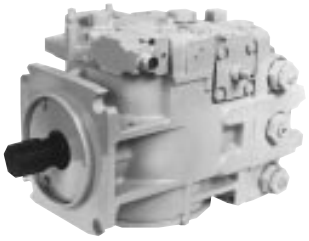
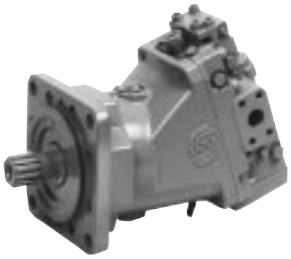
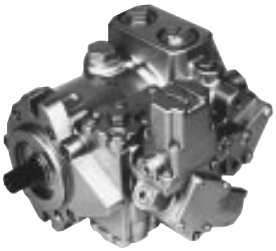
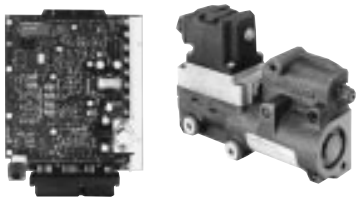
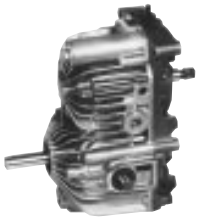
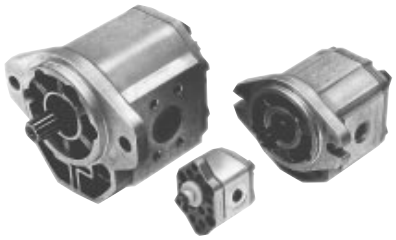
 Heavy Duty Axial Piston Pumps and Motors	 Heavy Duty Bent Axis Variable Motors	Cartridge Motors/ Compact Wheel Drives
 Medium Duty Axial Piston Pumps and Motors	 Microcontrollers and Electrohydraulic Controls	 Hydrostatic Transmission Packages
Open Circuit Axial Piston Pumps	 Gear Pumps and Motors	Genuine Service Parts

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